**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 3
AMENDED REPORT ☐

| APPLICATION FOR PERMIT TO DRILL | 1. WELL NAME and NUMBER: NBU 922-31F3S |
|---|---|
| 2. TYPE OF WORK: DRILL NEW WELL (●) REENTER P&A WELL ( ) DEEPEN WELL ( ) | 3. FIELD OR WILDCAT: NATURAL BUTTES |
| 4. TYPE OF WELL: Gas Well Coalbed Methane Well: NO | 5. UNIT or COMMUNITIZATION AGREEMENT NAME: NATURAL BUTTES |
| 6. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P. | 7. OPERATOR PHONE: 720 929-6587 |
| 8. ADDRESS OF OPERATOR: P.O. Box 173779, Denver, CO, 80217 | 9. OPERATOR E-MAIL: mary.mondragon@anadarko.com |
| 10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE): ML23607 | 11. MINERAL OWNERSHIP: FEDERAL ( ) INDIAN ( ) STATE (●) FEE ( ) |
| | 12. SURFACE OWNERSHIP: FEDERAL ( ) INDIAN ( ) STATE (●) FEE ( ) |
| 13. NAME OF SURFACE OWNER (if box 12 = 'fee') | 14. SURFACE OWNER PHONE (if box 12 = 'fee') |
| 15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee') | 16. SURFACE OWNER E-MAIL (if box 12 = 'fee') |
| 17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN') | 18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS: YES (●) (Submit Commingling Application) NO ( ) |
| | 19. SLANT: VERTICAL ( ) DIRECTIONAL (●) HORIZONTAL ( ) |

| 20. LOCATION OF WELL | FOOTAGES | QTR-QTR | SECTION | TOWNSHIP | RANGE | MERIDIAN |
|---|---|---|---|---|---|---|
| LOCATION AT SURFACE | 2607 FSL 1443 FWL | NESW | 31 | 9.0 S | 22.0 E | S |
| Top of Uppermost Producing Zone | 2215 FNL 1258 FWL | SENW | 31 | 9.0 S | 22.0 E | S |
| At Total Depth | 2215 FNL 1258 FWL | SENW | 31 | 9.0 S | 22.0 E | S |

| 21. COUNTY: UINTAH | 22. DISTANCE TO NEAREST LEASE LINE (Feet): 1258 | 23. NUMBER OF ACRES IN DRILLING UNIT: 124 |
|---|---|---|
| | 25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed): 500 | 26. PROPOSED DEPTH: MD: 9273 TVD: 9220 |
| 27. ELEVATION - GROUND LEVEL: 4841 | 28. BOND NUMBER: 22013542 | 29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE: Permit #43-8496 |

**ATTACHMENTS**

**VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES**

| | |
|---|---|
| ☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER | ☑ COMPLETE DRILLING PLAN |
| ☐ AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE) | ☐ FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER |
| ☑ DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED) | ☑ TOPOGRAPHICAL MAP |

| NAME: Danielle Piernot | TITLE: Regulatory Analyst | PHONE: 720 929-6156 |
|---|---|---|
| SIGNATURE | DATE: 05/11/2009 | EMAIL: danielle.piernot@anadarko.com |

| API NUMBER ASSIGNED | APPROVAL |
|---|---|
| 43047504190000 | Permit Manager |

| Proposed Hole, Casing, and Cement | | | | | | |
|---|---|---|---|---|---|---|
| **String** | **Hole Size** | **Casing Size** | **Top (MD)** | **Bottom (MD)** | | |
| Prod | 7.875 | 4.5 | 0 | 9273 | | |
| **Pipe** | **Grade** | **Length** | **Weight** | | | |
| | Grade I-80 LT&C | 9273 | 11.6 | | | |
| | | | | | | |

| Proposed Hole, Casing, and Cement | | | | | | |
|---|---|---|---|---|---|---|
| **String** | **Hole Size** | **Casing Size** | **Top (MD)** | **Bottom (MD)** | | |
| Surf | 12.25 | 9.625 | 0 | 2140 | | |
| **Pipe** | **Grade** | **Length** | **Weight** | | | |
| | Grade J-55 LT&C | 2140 | 36.0 | | | |
| | | | | | | |

# Kerr–McGee Oil & Gas Onshore LP

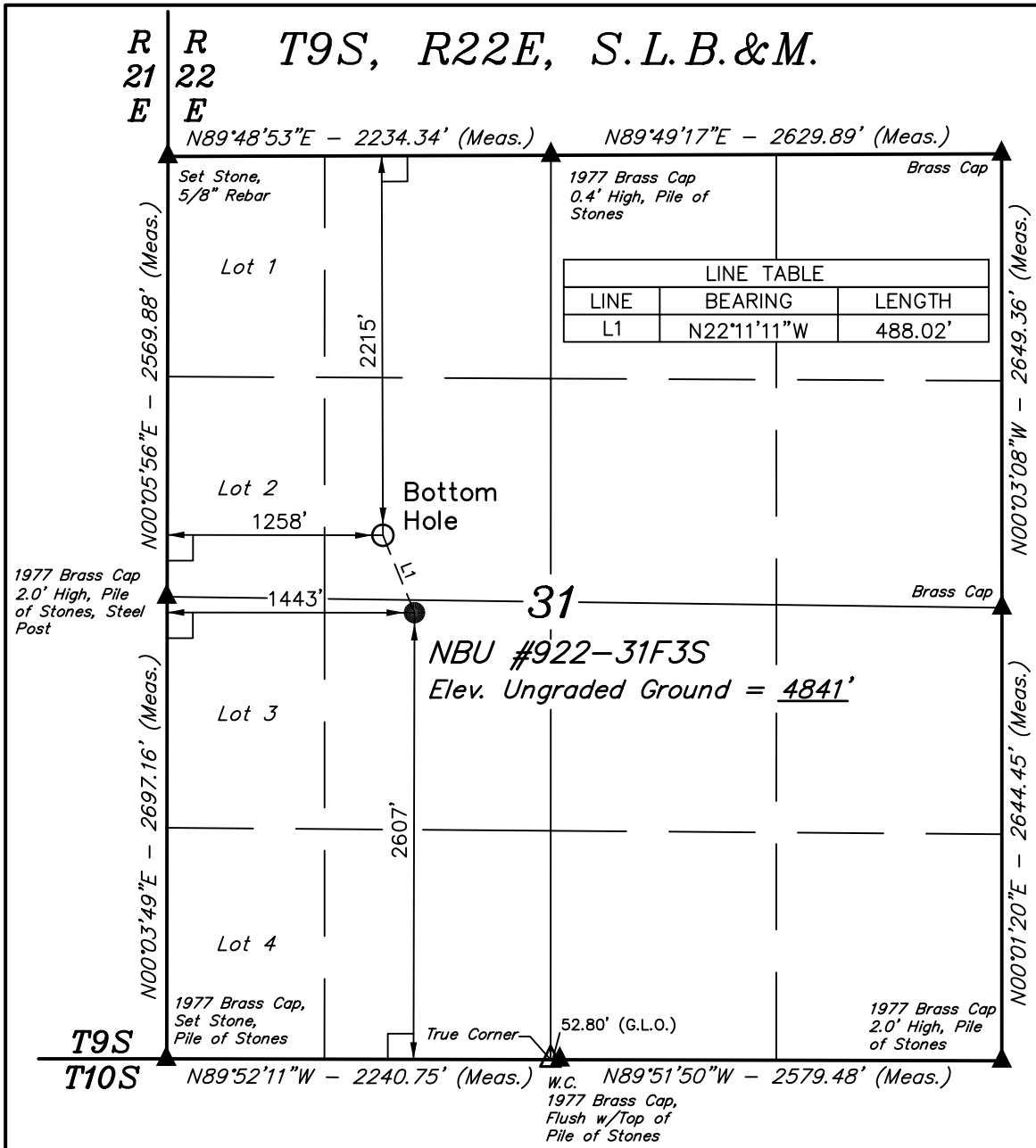
Well location, NBU #922–31F3S, located as shown in the NE 1/4 SW 1/4 of Section 31, T9S, R22E, S.L.B.&M., Uintah County, Utah.

## BASIS OF ELEVATION

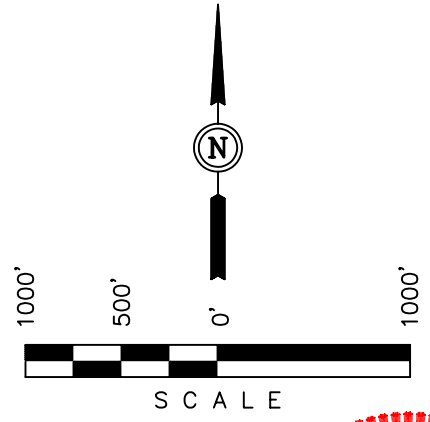
TWO WATER TRIANGULATION STATION LOCATED IN THE NW 1/4 OF SECTION 1, T10S, R21E, S.L.B.&M. TAKEN FROM THE BIG PACK MTN NE QUADRANGLE, UTAH, UINTAH COUNTY, 7.5 MINUTE SERIES (TOPOGRAPHICAL MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 5238 FEET.

## BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



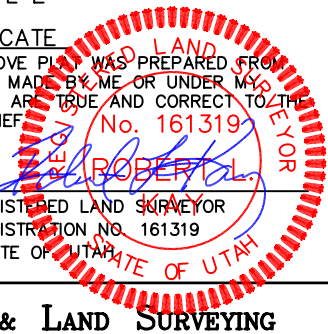

| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| L1 | N22°11'11"W | 488.02' |




## CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
REGISTRATION NO. 161319
STATE OF UTAH




## LEGEND:

└ = 90° SYMBOL
● = PROPOSED WELL HEAD.
▲ = SECTION CORNERS LOCATED.
△ = SECTION CORNERS RE–ESTABLISHED. (Not Set on Ground)

| NAD 83 (TARGET BOTTOM HOLE) | NAD 83 (SURFACE LOCATION) |
|---|---|
| LATITUDE = 39°59'37.20" (39.993667) | LATITUDE = 39°59'32.74" (39.992428) |
| LONGITUDE = 109°29'10.21" (109.486169) | LONGITUDE = 109°29'07.84" (109.485511) |
| **NAD 27 (TARGET BOTTOM HOLE)** | **NAD 27 (SURFACE LOCATION)** |
| LATITUDE = 39°59'37.33" (39.993703) | LATITUDE = 39°59'32.87" (39.992464) |
| LONGITUDE = 109°29'07.74" (109.485483) | LONGITUDE = 109°29'05.37" (109.484825) |


**UINTAH ENGINEERING & LAND SURVEYING**
*85 SOUTH 200 EAST – VERNAL, UTAH 84078*
(435) 789–1017


| | | |
|---|---|---|
| SCALE: 1" = 1000' | DATE SURVEYED: 11–19–08 | DATE DRAWN: 12–05–08 |
| PARTY: L.K. C.K. D.P. | REFERENCES: G.L.O. PLAT | |
| WEATHER: COOL | FILE: Kerr–McGee Oil & Gas Onshore LP | |

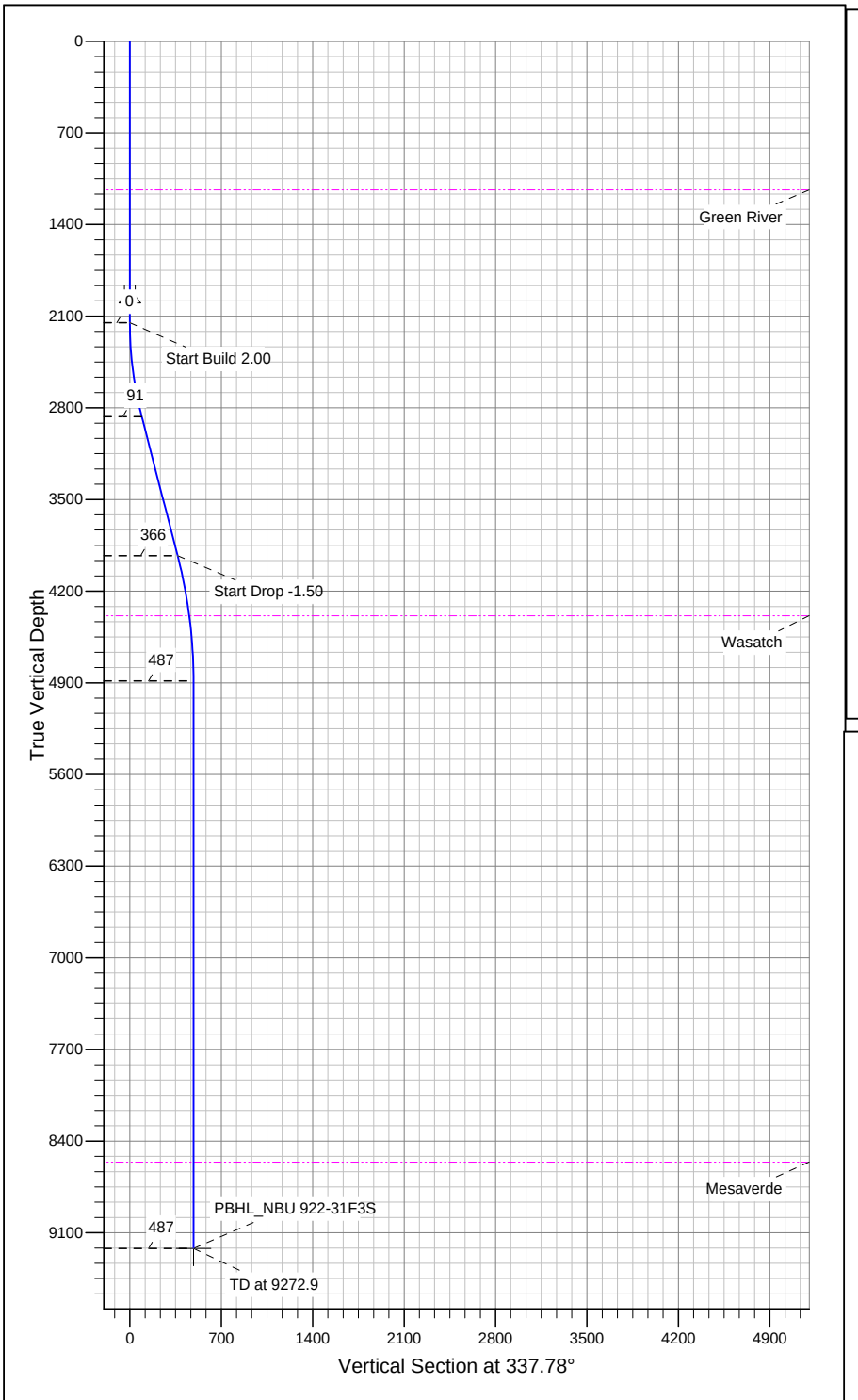
'APIWellNo:43047504190000'

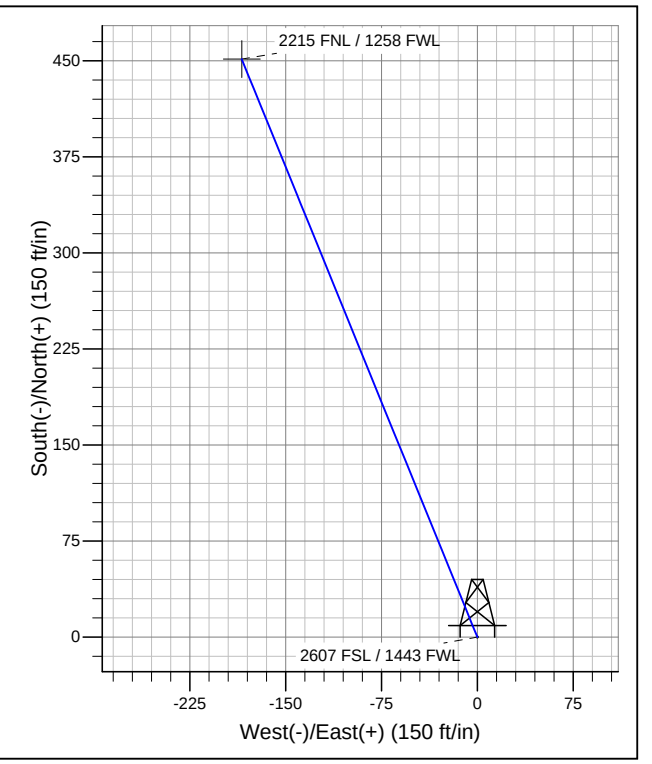
'APIWellNo:43047504190000'

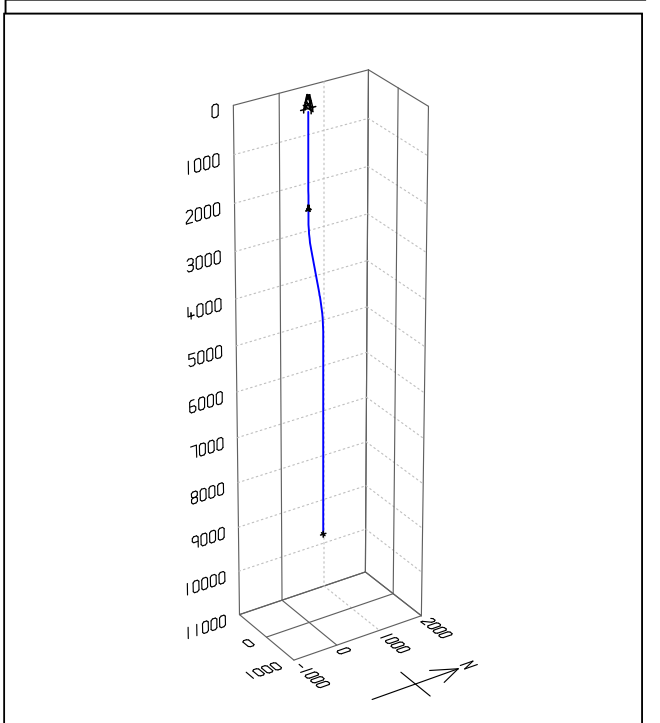
Anadarko Petroleum Corporation

Well Name: P_NBU 922-31F3S
Surface Location: UINTAH_NBU 922-31K PAD
NAD 1927 (NADCON CONUS) Universal Transverse Mercator (US Survey Feet)
UTAH - UTM (feet), NAD27, Zone 12N
Ground Elevation: 4841.0

| Northing | Easting | Latitude | Longitude |
|---|---|---|---|
| 14526907.15 | 2064809.36 | 39.992464°N | 109.484825°W |

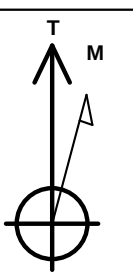


SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 |
| 2 | 2150.0 | 0.00 | 0.00 | 2150.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 |
| 3 | 2875.0 | 14.50 | 337.78 | 2867.3 | 84.5 | -34.5 | 2.00 | 337.78 | 91.3 |
| 4 | 3971.5 | 14.50 | 337.78 | 3928.8 | 338.6 | -138.3 | 0.00 | 0.00 | 365.8 |
| 5 | 4938.1 | 0.00 | 0.00 | 4885.2 | 451.3 | -184.3 | 1.50 | 180.00 | 487.5 |
| 6 | 9272.9 | 0.00 | 0.00 | 9220.0 | 451.3 | -184.3 | 0.00 | 0.00 | 487.5 |




Azimuths to True North
Magnetic North: 11.33°

Magnetic Field
Strength: 52570.5snT
Dip Angle: 65.93°
Date: 4/15/2009
Model: IGRF200510

# ROCKIES - PLANNING

**UTAH - UTM (feet), NAD27, Zone 12N**
**UINTAH_NBU 922-31K PAD**
**P_NBU 922-31F3S**
**P_NBU 922-31F3S**

**Plan: Plan #1 04-15-09 ZJRA6**

# Standard Planning Report - Geographic

**15 April, 2009**

# APC

## Planning Report - Geographic

| | | | |
|---|---|---|---|
| **Database:** | apc_edmp | **Local Co-ordinate Reference:** | Well P_NBU 922-31F3S |
| **Company:** | ROCKIES - PLANNING | **TVD Reference:** | WELL @ 4841.0ft (Original Well Elev) |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | WELL @ 4841.0ft (Original Well Elev) |
| **Site:** | UINTAH_NBU 922-31K PAD | **North Reference:** | True |
| **Well:** | P_NBU 922-31F3S | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | P_NBU 922-31F3S | | |
| **Design:** | Plan #1 04-15-09 ZJRA6 | | |

**Project** UTAH - UTM (feet), NAD27, Zone 12N

| | | | |
|---|---|---|---|
| **Map System:** | Universal Transverse Mercator (US Survey Fee | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Zone 12N (114 W to 108 W) | | |

**Site** UINTAH_NBU 922-31K PAD

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 14,526,925.45 ft | **Latitude:** | 39.992514°N |
| **From:** | Lat/Long | **Easting:** | 2,064,816.83 ft | **Longitude:** | 109.484797°W |
| **Position Uncertainty:** | 0.0 ft | **Slot Radius:** | " | **Grid Convergence:** | 0.97 ° |

**Well** P_NBU 922-31F3S

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 ft | **Northing:** | 14,526,907.15 ft | **Latitude:** | 39.992464°N |
| | **+E/-W** | 0.0 ft | **Easting:** | 2,064,809.36 ft | **Longitude:** | 109.484825°W |
| **Position Uncertainty** | | 0.0 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 4,841.0 ft |

**Wellbore** P_NBU 922-31F3S

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF200510 | 4/15/2009 | 11.33 | 65.93 | 52,571 |

**Design** Plan #1 04-15-09 ZJRA6

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
|---|---|---|---|---|
| | 9,220.0 | 0.0 | 0.0 | 337.78 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,150.0 | 0.00 | 0.00 | 2,150.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,875.0 | 14.50 | 337.78 | 2,867.3 | 84.5 | -34.5 | 2.00 | 2.00 | 0.00 | 337.78 | |
| 3,971.5 | 14.50 | 337.78 | 3,928.8 | 338.6 | -138.3 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4,938.1 | 0.00 | 0.00 | 4,885.2 | 451.3 | -184.3 | 1.50 | -1.50 | 0.00 | 180.00 | |
| 9,272.9 | 0.00 | 0.00 | 9,220.0 | 451.3 | -184.3 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL_NBU 922-31 |

’APIWellNo:43047504190000’

# APC

## Planning Report - Geographic

| | | | |
|---|---|---|---|
| **Database:** | apc_edmp | **Local Co-ordinate Reference:** | Well P_NBU 922-31F3S |
| **Company:** | ROCKIES - PLANNING | **TVD Reference:** | WELL @ 4841.0ft (Original Well Elev) |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | WELL @ 4841.0ft (Original Well Elev) |
| **Site:** | UINTAH_NBU 922-31K PAD | **North Reference:** | True |
| **Well:** | P_NBU 922-31F3S | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | P_NBU 922-31F3S | | |
| **Design:** | Plan #1 04-15-09 ZJRA6 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (ft) | Map Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 14,526,907.15 | 2,064,809.36 | 39.992464°N | 109.484825°W |
| 1,135.0 | 0.00 | 0.00 | 1,135.0 | 0.0 | 0.0 | 14,526,907.15 | 2,064,809.36 | 39.992464°N | 109.484825°W |
| **Green River** | | | | | | | | | |
| 2,000.0 | 0.00 | 0.00 | 2,000.0 | 0.0 | 0.0 | 14,526,907.15 | 2,064,809.36 | 39.992464°N | 109.484825°W |
| **Surface Casing** | | | | | | | | | |
| 2,150.0 | 0.00 | 0.00 | 2,150.0 | 0.0 | 0.0 | 14,526,907.15 | 2,064,809.36 | 39.992464°N | 109.484825°W |
| 2,875.0 | 14.50 | 337.78 | 2,867.3 | 84.5 | -34.5 | 14,526,991.03 | 2,064,773.43 | 39.992696°N | 109.484948°W |
| 3,971.5 | 14.50 | 337.78 | 3,928.8 | 338.6 | -138.3 | 14,527,243.38 | 2,064,665.30 | 39.993394°N | 109.485319°W |
| 4,439.5 | 7.48 | 337.78 | 4,388.0 | 421.2 | -172.0 | 14,527,325.34 | 2,064,630.19 | 39.993620°N | 109.485439°W |
| **Wasatch** | | | | | | | | | |
| 4,938.1 | 0.00 | 0.00 | 4,885.2 | 451.3 | -184.3 | 14,527,355.21 | 2,064,617.39 | 39.993703°N | 109.485483°W |
| 8,613.9 | 0.00 | 0.00 | 8,561.0 | 451.3 | -184.3 | 14,527,355.21 | 2,064,617.39 | 39.993703°N | 109.485483°W |
| **Mesaverde** | | | | | | | | | |
| 9,272.9 | 0.00 | 0.00 | 9,220.0 | 451.3 | -184.3 | 14,527,355.21 | 2,064,617.39 | 39.993703°N | 109.485483°W |

**Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL_NBU 922-31F3<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 9,220.0 | 451.3 | -184.3 | 14,527,355.21 | 2,064,617.39 | 39.993703°N | 109.485483°W |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---|---|---|---|---|
| 2,000.0 | 2,000.0 | Surface Casing | 9-5/8 | 12-1/4 |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,135.0 | 1,135.0 | Green River | | 0.00 | |
| 8,613.9 | 8,561.0 | Mesaverde | | 0.00 | |
| 4,439.5 | 4,388.0 | Wasatch | | 0.00 | |

**NBU 922-31F3S**
Pad: NBU 922-31K
Surface: 2,607' FSL, 1,443' FWL (NE/4SW/4)
BHL: 2,215' FNL 1,258' FWL (SE/4NW/4)
Sec. 31 T9S R22E

Uintah, Utah
Mineral Lease: ML23607

# ONSHORE ORDER NO. 1

## *DRILLING PROGRAM*

**1. – 2. Estimated Tops of Important Geologic Markers:**
**Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

| Formation | Depth | Resource |
|---|---|---|
| Uinta | 0 – Surface | |
| Green River | 1,135' | |
| Birds Nest | 1,466' | Water |
| Mahogany | 1,938' | Water |
| Wasatch | 4,388' | Gas |
| Mesaverde | 7,006' | Gas |
| MVU2 | 7,975' | Gas |
| MVL1 | 8,561' | Gas |
| TVD | 9,220' | |
| TD | 9,273' | |

**3. Pressure Control Equipment** (Schematic Attached)

*Please refer to the attached Drilling Program.*

**4. Proposed Casing & Cementing Program:**

*Please refer to the attached Drilling Program.*

**5. Drilling Fluids Program:**

*Please refer to the attached Drilling Program.*

**6. Evaluation Program:**

*Please refer to the attached Drilling Program.*

**7. Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 9,273' TD, approximately equals 5,457 psi (calculated at 0.59 psi/foot).

Maximum anticipated surface pressure equals approximately 3,429 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

**8. Anticipated Starting Dates:**

*Drilling is planned to commence immediately upon approval of this application.*

**9. Variances:**

*Please refer to the attached Drilling Program.*
*Onshore Order #2 – Air Drilling Variance*

*Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2*

- *Blowout Prevention Equipment (BOPE) requirements;*
- *Mud program requirements; and*
- *Special drilling operation (surface equipment placement) requirements associated with air drilling.*

*This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.*

*The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.*

*More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.*

***Background***

*In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.*

*Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.*

*The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 9-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.*

*KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.*

***Variance for BOPE Requirements***
*The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.*

***Variance for Mud Material Requirements***
*Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.*

***Variance for Special Drilling Operation (surface equipment placement) Requirements***
*Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.*

*Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.*

*Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.*

*Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.*

***Conclusion***

*The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.*

**10. Other Information:**

*Please refer to the attached Drilling Program.*

'APIWellNo:43047504190000'

# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

| | | | | | |
|---|---|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | | | DATE | May 11, 2009 |
| WELL NAME | **NBU 922-31F3S** | | | TD | 9,220' TVD 9,273' MD |
| FIELD | Natural Buttes | COUNTY | Uintah | STATE | Utah ELEVATION 4,841' GL KB 4,856' |
| SURFACE LOCATION | NE/4 SW/4 2,607' FSL | 1,443' FWL | Sec 31 | T 9S | R 22E |
| | Latitude: 39.992464 | Longitude: -109.484825 | | | NAD 27 |
| BTM HOLE LOCATION | SE/4 NW/4 2,215' FNL | 1,258' FWL | Sec 31 | T 9S | R 22E |
| | Latitude: 39.993703 | Longitude: -109.485483 | | | NAD 27 |
| OBJECTIVE ZONE(S) | Wasatch/Mesaverde | | | | |
| ADDITIONAL INFO | Regulatory Agencies: SITLA (Minerals), UDOGM (Surface), Tri-County Health Dept. | | | | |

| GEOLOGICAL | | | MECHANICAL | | |
|---|---|---|---|---|---|
| LOGS | FORMATION TOPS | DEPTH | HOLE SIZE | CASING SIZE | MUD WEIGHT |
| | | 20' | | 14" | |
| | | | 12-1/4" | 9-5/8", 36#, J-55, LTC | Air mist |

**All water flows encountered while drilling will be reported to the appropriate agencies.**

| | |
|---|---|
| **Green River @** | **1,135'** |
| **Top of Birds Nest @** | **1,466** |
| **Mahogany @** | **1,938** |
| **Preset f/ GL @** | **2,140' MD** |

Note: 12.25" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone.

| | |
|---|---|
| **Wasatch @** | **4,388'** |
| **Mverde @** | **7,006' TVD** |
| **MVU2 @** | **7,975' TVD** |
| **MVU1 @** | **8,561' TVD** |
| **TD @** | **9,220' TVD 9,273' MD** |

Mud logging program TBD
Cased hole logging program from TD - surf csg

Max anticipated Mud required 11.6 ppg

| | | |
|---|---|---|
| 7-7/8" | 4-1/2" 11.6# I-80 or equivalent LTC csg | Water / Fresh Water Mud 8.3-11.6 ppg |

'APIWellNo:43047504190000'

# KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

## CASING PROGRAM

| | SIZE | INTERVAL | | | WT. | GR. | CPLG. | DESIGN FACTORS BURST | COLLAPSE | TENSION |
|---|---|---|---|---|---|---|---|---|---|---|
| CONDUCTOR | 14" | 0-40' | | | | | | | | |
| | | | | | | | | 3520 | 2020 | 453000 |
| SURFACE | 9-5/8" | 0 | to | 2,140 | 36.00 | J-55 | LTC | 0.99 | 2.02 | 7.48 |
| | | | | | | | | 7,780 | 6,350 | 201,000 |
| PRODUCTION | 4-1/2" | 0 | to | 9,273 | 11.60 | I-80 | LTC | 2.20 | 1.14 | 2.14 |

1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

2) MASP (Prod Casing) = Pore Pressure at TD - (0.22 psi/ft-partial evac gradient x TD)
(Burst Assumptions: TD = 11.6 ppg) 0.22 psi/ft = gradient for partially evac wellbore
(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)
**MASP 3,429 psi**

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD
(Burst Assumptions: TD = 11.6 ppg) 0.59 psi/ft = bottomhole gradient
(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)
**MABHP 5,457 psi**

## CEMENT PROGRAM

| | | FT. OF FILL | DESCRIPTION | SACKS | EXCESS | WEIGHT | YIELD |
|---|---|---|---|---|---|---|---|
| SURFACE | LEAD | 500 | Premium cmt + 2% CaCl | 215 | 60% | 15.60 | 1.18 |
| **Option 1** | | | + 0.25 pps flocele | | | | |
| | TOP OUT CMT (1) | 200 | 20 gals sodium silicate + Premium cmt | 50 | | 15.60 | 1.18 |
| | | | + 2% CaCl + 0.25 pps flocele | | | | |
| | TOP OUT CMT (2) | as required | Premium cmt + 2% CaCl | as req. | | 15.60 | 1.18 |
| SURFACE | | | **NOTE: If well will circulate water to surface, option 2 will be utilized** | | | | |
| **Option 2** | LEAD | 1500 | 65/35 Poz + 6% Gel + 10 pps gilsonite | 360 | 35% | 12.60 | 1.81 |
| | | | +.25 pps Flocele + 3% salt BWOW | | | | |
| | TAIL | 500 | Premium cmt + 2% CaCl | 180 | 35% | 15.60 | 1.18 |
| | | | + 0.25 pps flocele | | | | |
| | TOP OUT CMT | as required | Premium cmt + 2% CaCl | as req. | | 15.60 | 1.18 |
| PRODUCTION | LEAD | 3,883' | Premium Lite II + 3% KCl + 0.25 pps | 370 | 40% | 11.00 | 3.38 |
| | | | celloflake + 5 pps gilsonite + 10% gel | | | | |
| | | | + 0.5% extender | | | | |
| | TAIL | 5,390' | 50/50 Poz/G + 10% salt + 2% gel | 1320 | 40% | 14.30 | 1.31 |
| | | | +.1% R-3 | | | | |

*Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained
*Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

## FLOAT EQUIPMENT & CENTRALIZERS

| | |
|---|---|
| SURFACE | Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe |
| PRODUCTION | Float shoe, 1 jt, float collar. No centralizers will be used. |

## ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

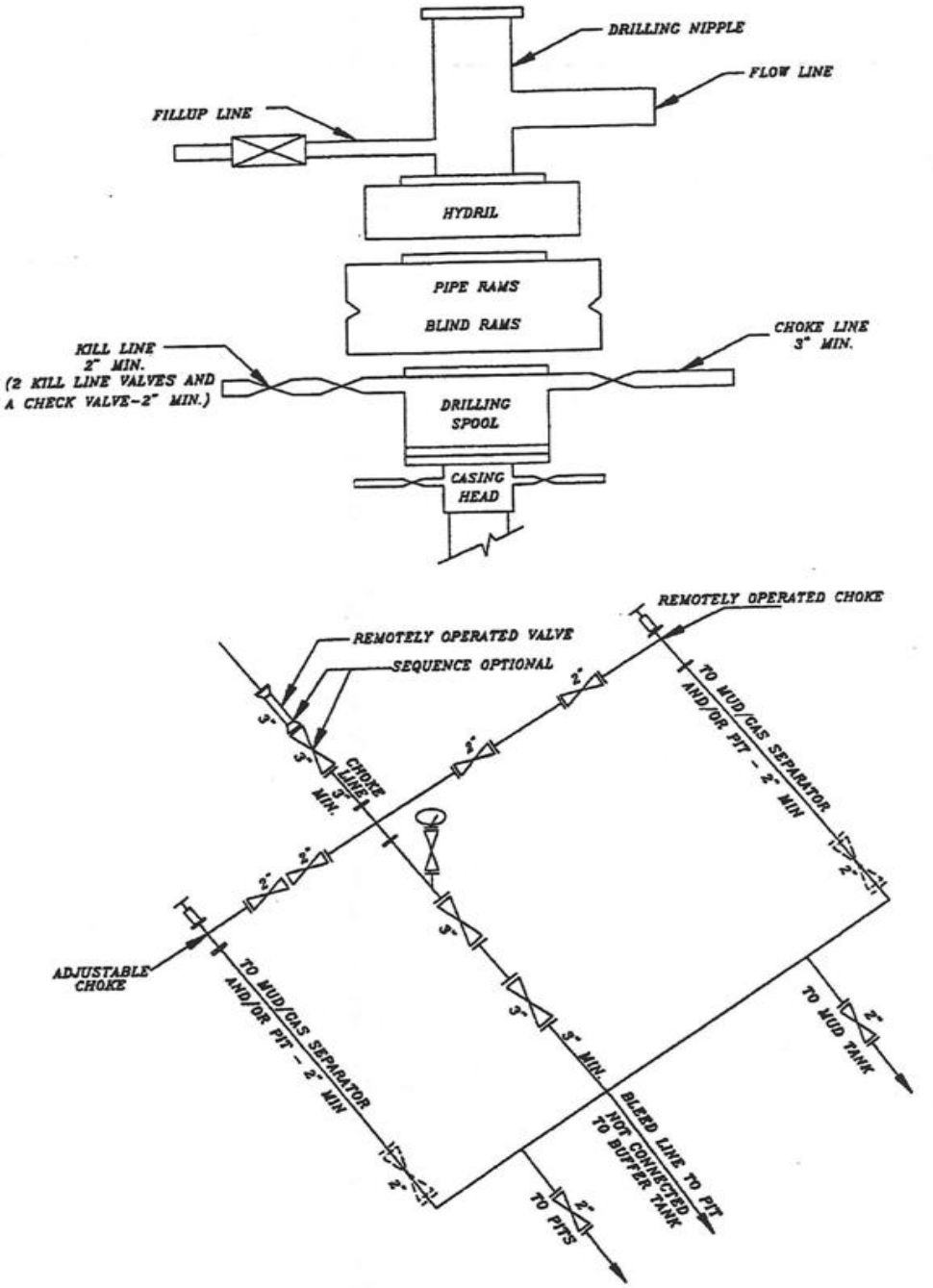
Surveys will be taken at 1,000' minimum intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

**DRILLING ENGINEER:** _____ **DATE:** _____
John Huycke / Grant Schluender

**DRILLING SUPERINTENDENT:** _____ **DATE:** _____
John Merkel / Lovel Young

**EXHIBIT A**
**NBU 922-31F3S**




**SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**

'APIWellNo:43047504190000'

# Kerr-McGee Oil & Gas Onshore LP

## FIGURE #1

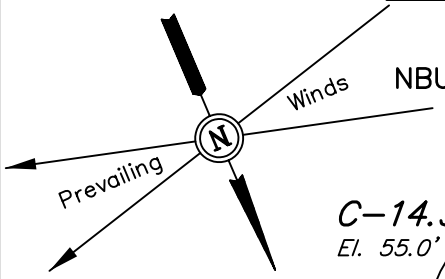
LOCATION LAYOUT FOR

NBU #922-31F3S, #922-31F2S & #922-31J2S

SECTION 31, T9S, R22E, S.L.B.&M.

NE 1/4 SW 1/4

SCALE: 1" = 50'
DATE: 12-05-08
DRAWN BY: D.P.




| NAD 83 (Existing #922-31K-2TX Well) |
|---|
| LATITUDE = 39°59'32.39" (39.992331) |
| LONGITUDE = 109°29'08.07" (109.485575) |
| **NAD 27 (Existing #922-31K-2TX Well)** |
| LATITUDE = 39°59'32.52" (39.992367) |
| LONGITUDE = 109°29'05.60" (109.484889) |
| **NAD 83 (Existing #280 Well)** |
| LATITUDE = 39°59'32.66" (39.992406) |
| LONGITUDE = 109°29'07.59" (109.485442) |
| **NAD 27 (Existing #280 Well)** |
| LATITUDE = 39°59'32.79" (39.992442) |
| LONGITUDE = 109°29'05.12" (109.484756) |

| LINE TABLE | | |
|---|---|---|
| LINE | AZIMUTH | LENGTH |
| L1 | 206.394722 | 39.44' |
| L2 | 112.943333 | 20.86' |

NOTE:
Flare Pit is to be located a min. of 100' from the Well Head.

C-14.3'
El. 55.0'

C-6.1'
El. 46.8'

F-2.7'
El. 38.0'

Sta. 4+50

Topsoil Stockpile

Existing Topsoil Stockpile

Round Corners as Needed

Edge of Existing Pad

Approx. Toe of Fill Slope

Ex. Tank

Ex. Metal Tank Berm

Ex. Skid Dehydrator

Anchor (Typ.)

Ex. Trough-Methane Tank

210'

270'

Pit Topsoil

C-0.5'
El. 41.2'

FLARE PIT

Approx. Top of Cut Slope

C-12.6'
El. 43.3'
(Btm.Pit)

C-0.2'
El. 40.9'

CATWALK

#922-31J2S

PIPE RACKS

PIPE TUBS

Ex. #922-31K-2TX

C-0.3'
El. 41.0'

Existing #280

RIG

#922-31F3S

DOG HOUSE

60'

160'

Sta. 1+80

F-3.0'
El. 37.7'

30'

70'

20'

N88°03'01"E 1615.38'
(TO BOTTOM HOLE)

C-0.2'
El. 40.9'

#922-31F2S

C-0.3'
El. 41.0'

LIGHT PLANT

BOILER

COMPRESSOR

BOOSTER

TOILET

TRAILER

WATER TANK

180'

MUD TANKS

PUMP HOUSE

TRASH

160'

15' WIDE BENCH/DIKE

200'

RESERVE PITS (10' Deep)

Total Pit Capacity W/2' of Freeboard = 13,550 Bbls. ±
Total Pit Volume = 3,800 Cu. Yds.

SLOPE 1 1/2 : 1

Ex. Trough-Methane Tank

Ex. Tank

Ex. Skid Dehydrator

Ex. Metal Tank Berm

N11°51'26"W 931.33'
(TO BOTTOM HOLE)

N22°11'11"W 488.02'
(TO BOTTOM HOLE)

F-3.4'
El. 37.3'

Sta. 0+25

Sta. 0+00

C-8.8'
El. 39.5'
(Btm. Pit)

15' WIDE BENCH/DIKE

PROPANE STORAGE

F-3.3'
El. 37.4'

F-3.3'
El. 37.4'

Reserve Pit Backfill & Spoils Stockpile

Existing Access Road

F-6.8'
El. 33.9'

REGISTERED LAND SURVEYOR
No. 161319
ROBERT L. KAY
STATE OF UTAH

NOTES:

Elev. Ungraded Ground At NBU #922-31F3S Loc. Stake = 4841.0'

FINISHED GRADE ELEV. AT NBU #922-31F3S LOC. STAKE = 4840.7'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'APIWellNo:43047504190000'

# Kerr-McGee Oil & Gas Onshore LP

FIGURE #2

## TYPICAL CROSS SECTIONS FOR

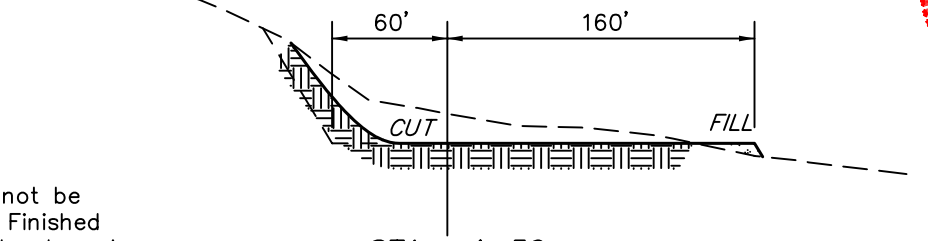
NBU #922-31F3S, #922-31F2S & #922-31J2S
SECTION 31, T9S, R22E, S.L.B.&M.
NE 1/4 SW 1/4

1" = 20'
X-Section Scale
1" = 100'

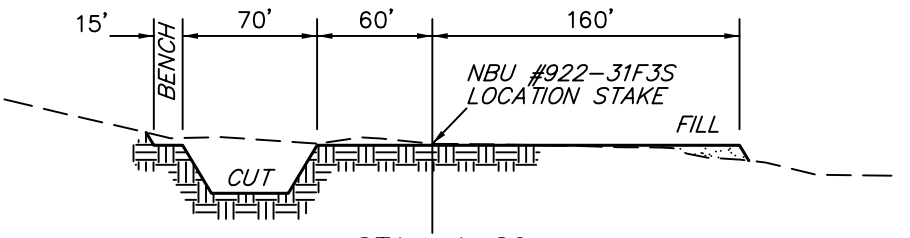
DATE: 12-05-08
DRAWN BY: D.P.

REGISTERED LAND SURVEYOR
No. 161319
ROBERT L. KAY
STATE OF UTAH

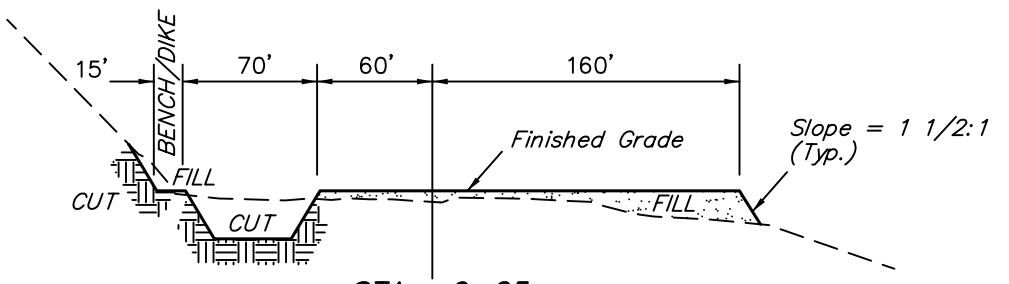
NOTE:
Topsoil should not be Stripped Below Finished Grade on Substructure Area.



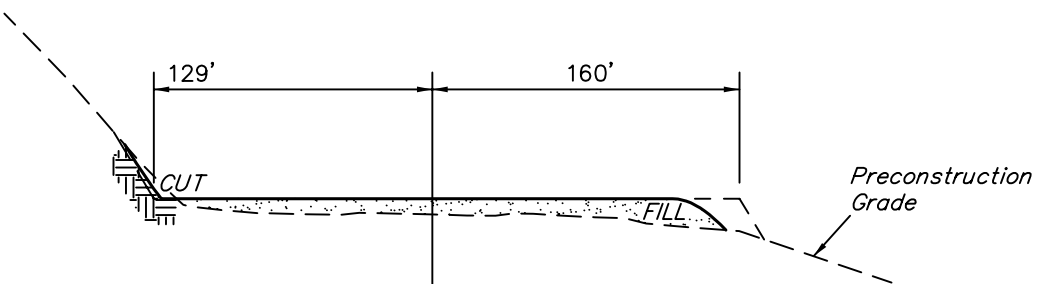

STA. 4+50




STA. 1+80




STA. 0+25




STA. 0+00

### APPROXIMATE ACREAGES

EXISTING WELL SITE DISTURBANCE = ± 1.505 ACRES
NEW CONSTRUCTION WELL SITE DISTURBANCE = ± 2.205 ACRES

TOTAL = ± 3.710 ACRES

* NOTE:
FILL QUANTITY INCLUDES 5% FOR COMPACTION

### APPROXIMATE YARDAGES

CUT
(6") Topsoil Stripping (New Construction Only) = 1,170 Cu. Yds.
Remaining Location = 6,450 Cu. Yds.
TOTAL CUT = 7,620 CU.YDS.
FILL = 4,430 CU.YDS.

EXCESS MATERIAL = 3,190 Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.) = 3,070 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation) = 120 Cu. Yds.

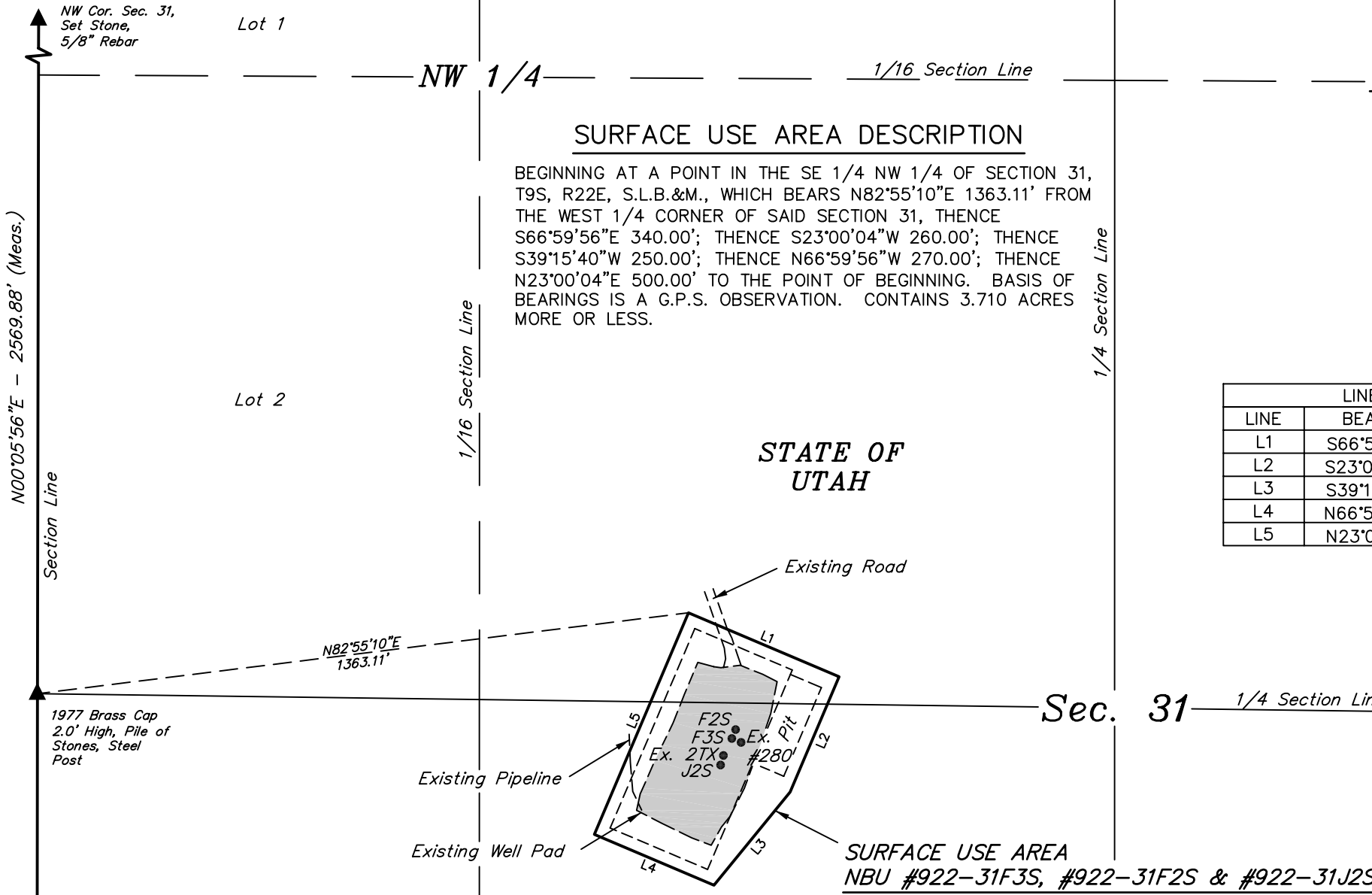

UINTAH ENGINEERING & LAND SURVEYING
85 So. 200 East * Vernal, Utah 84078 * (435) 789-1017

Kerr-McGee Oil & Gas Onshore LP

# LOCATION SURFACE USE AREA, ROAD RIGHT-OF-WAY & PIPELINE RIGHT-OF-WAY ON STATE OF UTAH LANDS

*(For NBU #922-31F3S, #922-31F2S & #922-31J2S)*

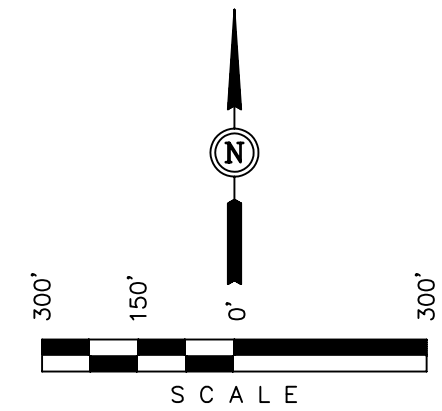
LOCATED IN
SECTION 31, T9S, R22E, S.L.B.&M.,
UINTAH COUNTY, UTAH




## SURFACE USE AREA DESCRIPTION

BEGINNING AT A POINT IN THE SE 1/4 NW 1/4 OF SECTION 31, T9S, R22E, S.L.B.&M., WHICH BEARS N82°55'10"E 1363.11' FROM THE WEST 1/4 CORNER OF SAID SECTION 31, THENCE S66°59'56"E 340.00'; THENCE S23°00'04"W 260.00'; THENCE S39°15'40"W 250.00'; THENCE N66°59'56"W 270.00'; THENCE N23°00'04"E 500.00' TO THE POINT OF BEGINNING. BASIS OF BEARINGS IS A G.P.S. OBSERVATION. CONTAINS 3.710 ACRES MORE OR LESS.

| LINE TABLE | | |
|---|---|---|
| LINE | BEARING | LENGTH |
| L1 | S66°59'56"E | 340.00' |
| L2 | S23°00'04"W | 260.00' |
| L3 | S39°15'40"W | 250.00' |
| L4 | N66°59'56"W | 270.00' |
| L5 | N23°00'04"E | 500.00' |




## BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.
▲ = SECTION CORNERS LOCATED.

## ROAD RIGHT-OF-WAY DESCRIPTION ON STATE OF UTAH LANDS

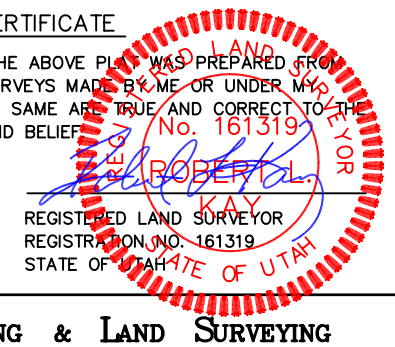
30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE IS CONTAINED WITHIN THE PROPOSED SURFACE USE AREA.

## PIPELINE RIGHT-OF-WAY DESCRIPTION ON STATE OF UTAH LANDS

30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE IS CONTAINED WITHIN THE PROPOSED SURFACE USE AREA.

## CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



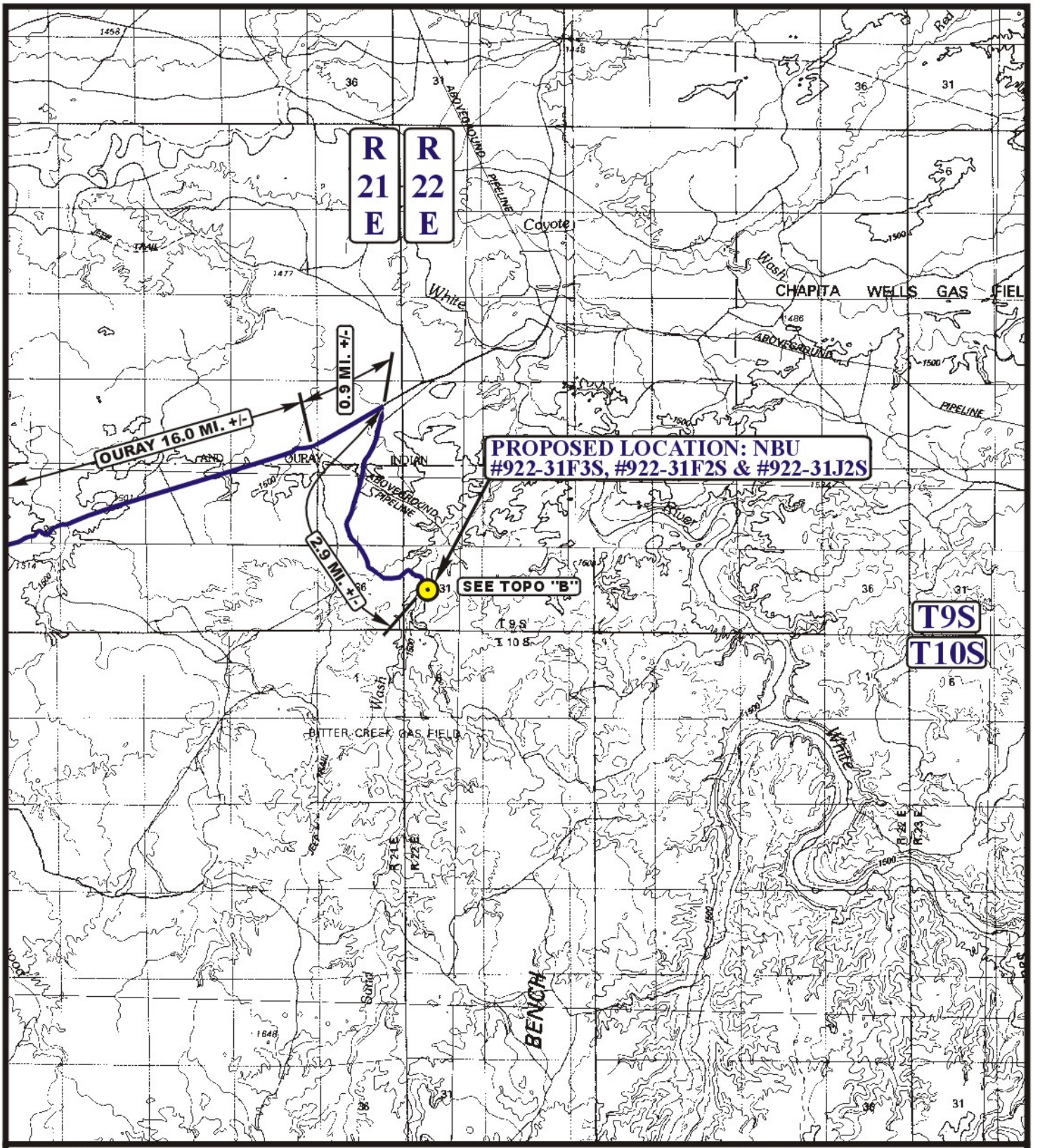

REGISTERED LAND SURVEYOR
REGISTRATION NO. 161319
STATE OF UTAH


**UINTAH ENGINEERING & LAND SURVEYING**
*85 SOUTH - 200 EAST • (435) 789-1017*
**VERNAL, UTAH - 84078**


| SCALE | DATE |
|---|---|
| 1" = 300' | 12-05-08 |
| PARTY: L.K. C.K. D.P. | REFERENCES: G.L.O. PLAT |
| WEATHER: COOL | FILE: 4 9 2 0 6 |

'API Well No: 43047504190000'

’APIWellNo:43047504190000’




**LEGEND:**

PROPOSED LOCATION

N

**Kerr-McGee Oil & Gas Onshore LP**

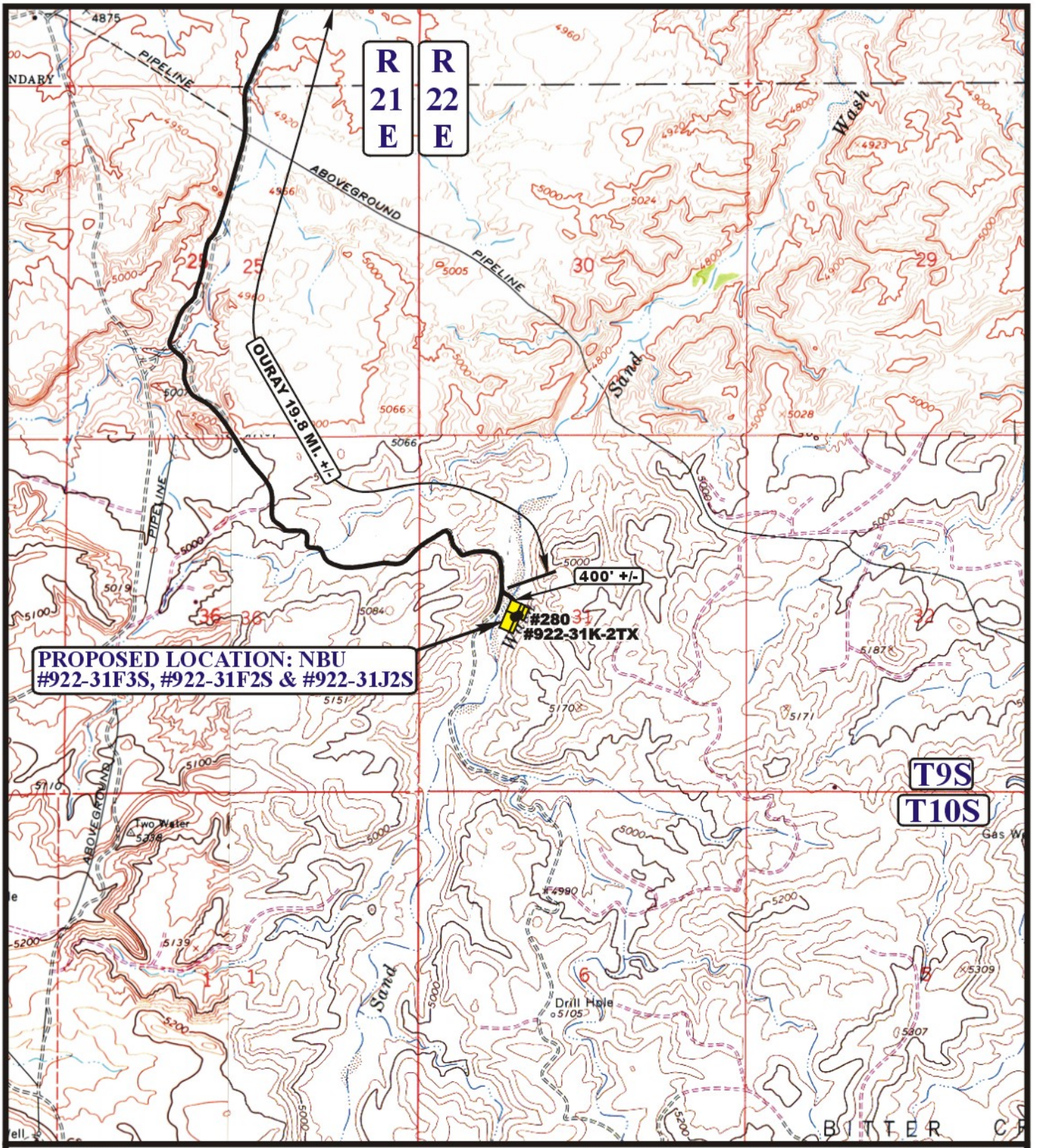
**NBU #922-31F3S, #922-31F2S & #922-31J2S**
**SECTION 31, T9S, R22E, S.L.B.&M.**
**NE 1/4 SW 1/4**


Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813


TOPOGRAPHIC MAP | 12 MONTH | 05 DAY | 08 YEAR | A TOPO

SCALE: 1:100,000 | DRAWN BY: D.P. | REVISED: 00-00-00

’APIWellNo:43047504190000’




**LEGEND:**

EXISTING ROAD

N

**Kerr-McGee Oil & Gas Onshore LP**

**NBU #922-31F3S, #922-31F2S & #922-31J2S**
**SECTION 31, T9S, R22E, S.L.B.&M.**
**NE 1/4 SW 1/4**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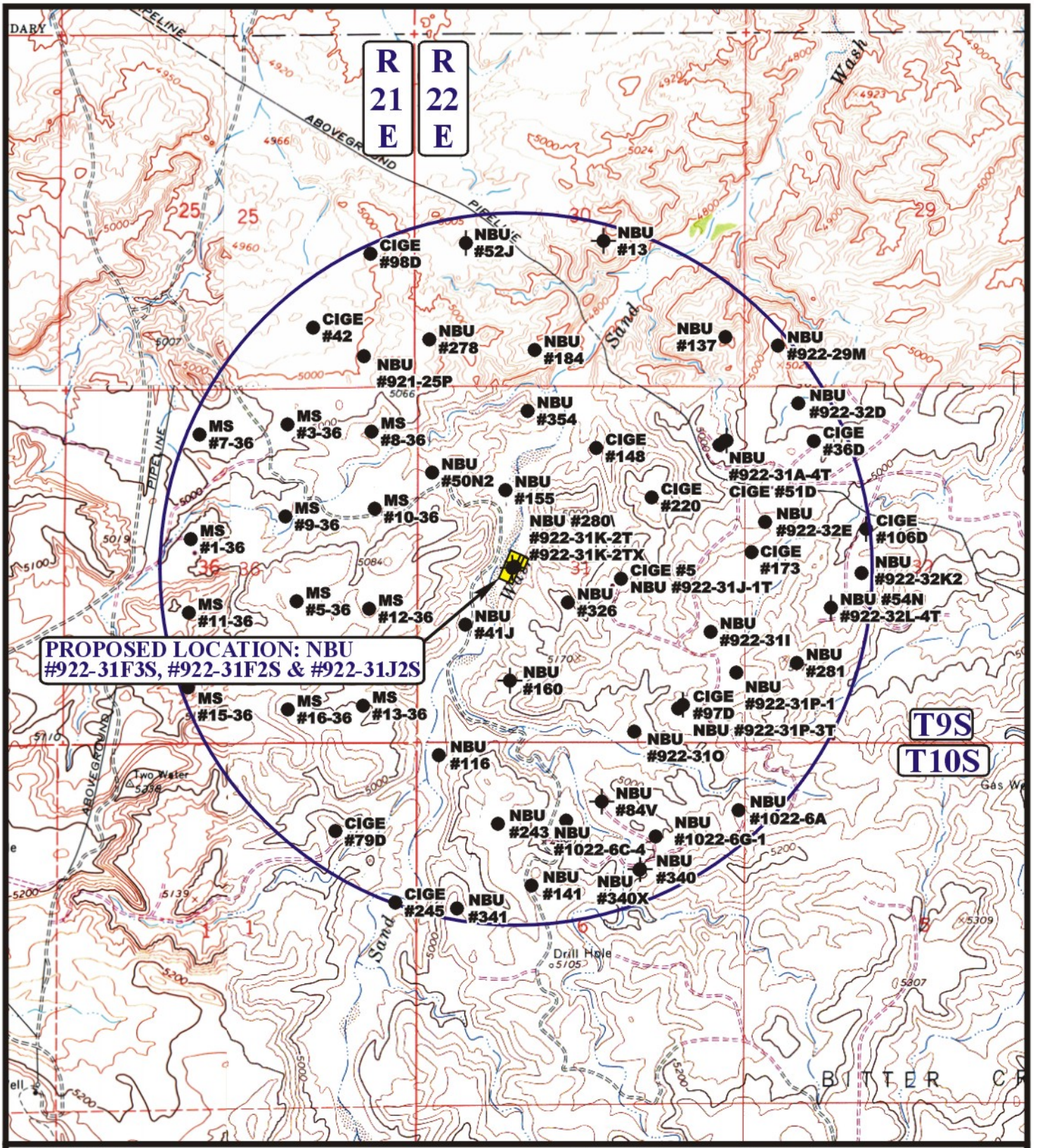
(435) 789-1017 * FAX (435) 789-1813


TOPOGRAPHIC MAP | 12 MONTH | 05 DAY | 08 YEAR | B TOPO

SCALE: 1" = 2000' | DRAWN BY: D.P. | REVISED: 00-00-00

’APIWellNo:43047504190000’




**LEGEND:**

- DISPOSAL WELLS
- WATER WELLS
- PRODUCING WELLS
- ABANDONED WELLS
- SHUT IN WELLS
- TEMPORARILY ABANDONED

N

**Kerr-McGee Oil & Gas Onshore LP**

**NBU #922-31F3S, #922-31F2S & #922-31J2S**
**SECTION 31, T9S, R22E, S.L.B.&M.**
**NE 1/4 SW 1/4**


Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813


TOPOGRAPHIC MAP | 12 MONTH | 05 DAY | 08 YEAR | C TOPO

SCALE: 1" = 2000' | DRAWN BY: D.P. | REVISED: 00-00-00

# Kerr-McGee Oil & Gas Onshore LP

## NBU #922-31F3S, #922-31F2S, & #922-31J2S

**LOCATED IN UINTAH COUNTY, UTAH**
**SECTION 31, T9S, R22E, S.L.B.&M.**

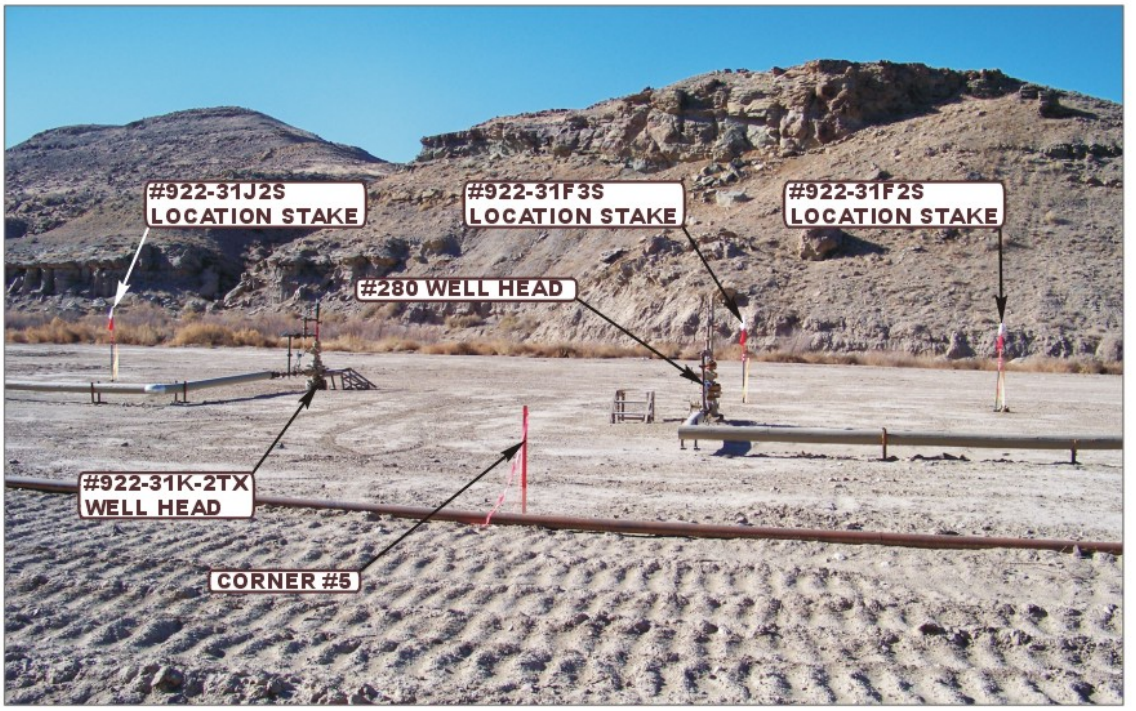



PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKES — CAMERA ANGLE: NORTHWESTERLY


PHOTO: VIEW OF EXISTING ACCESS — CAMERA ANGLE: SOUTHEASTERLY

- Since 1964 -
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

| LOCATION PHOTOS | 12 MONTH | 05 DAY | 08 YEAR | PHOTO |
|---|---|---|---|---|
| TAKEN BY: D.K. | DRAWN BY: D.P. | REVISED: 00-00-00 | | |

# Kerr-McGee Oil & Gas Onshore LP
## NBU #922-31F3S, #922-31F2S & #922-31J2S
## SECTION 31, T9S, R22E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 6.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN LEFT AND PROCEED IN A SOUTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 5.0 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY DIRECTION APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 3.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 0.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 2.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN LEFT AND PROCEED IN A SOUTHEASTERLY DIRECTION APPROXIMATELY 400’ TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 50.8 MILES.

***Kerr-McGee Oil & Gas Onshore LP***

**NBU 922-31F2S**
Surface: 2,626' FSL, 1,451' FWL (NE/4SW/4)
BHL: 1,737' FNL 1,258' FWL (SE/4NW/4)
Mineral Lease: ML23607

**NBU 922-31F3S**
Surface: 2,607' FSL, 1,443' FWL (NE/4SW/4)
BHL: 2,215' FNL 1,258' FWL (SE/4NW/4)
Mineral Lease: ML23607

**NBU 922-31J2S**
Surface: 2,552' FSL, 1,420' FWL (NE/4SW/4)
BHL: 2,611' FSL 1,837' FEL (NW/4SE/4)
Mineral Lease: UO1207A

Section 31 Township 9 South Range 22 East
Pad: NBU 922-31K
Uintah, Utah
Surface: State

# ONSHORE ORDER NO. 1

## *MULTI-POINT SURFACE USE & OPERATIONS PLAN*

**Directional Drilling:**

In accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, this well will be directionally drilled in order to access portions of our lease which are otherwise inaccessible due to topography.

**1. Existing Roads:**

Refer to Topo Map A for directions to the location.

Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.

**2. Planned Access Roads:**

Approximately ±0.0 mi. (±0') of new access road is proposed. Please refer to the attached Topo Map B.

The upgraded and new portions of the access road will be crowned and ditched with a running surface of 18 feet and a maximum disturbed width of 30 feet. Appropriate water control will be installed to control erosion.

***Existence of pipelines; maximum grade; turnouts; major cut and fills, culverts, or bridges; gates, cattle guards, fence cuts, or modifications to existing facilities were determined at the on-site.***

The access road was centerline flagged during time of staking.

Surfacing material may be necessary, depending upon weather conditions.

Surface disturbance and vehicular traffic will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.

**3. Location of Existing Wells Within a 1-Mile Radius:**

Please refer to Topo Map C.

**4. Location of Existing & Proposed Facilities:**

*The following guidelines will apply if the well is productive.*

All production facilities will be located on the disturbed portion of the well pad and at a minimum of 25 feet from the toe of the back slope or the top of the fill slope.

A dike will be constructed completely around those production facilities which contain fluids (i.e., production tanks, produced water tanks, and/or heater/treater). These dikes will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank, and be independent of the back cut.

All permanent (on-site six months or longer) above the ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earthtone color to match one of the standard environmental colors, as determined by the five state Rocky Mountain Inter-Agency Committee.

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The required color is Shadow Gray, a non-reflective earthtone.

Any necessary pits will be properly fenced to protect livestock and prevent wildlife entry.

**5. Location and Type of Water Supply:**

Water for drilling purposes will be obtained from Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim #43-8496, Application #53617.

Water will be hauled to location over the roads marked on Maps A and B.

No water well is to be drilled on this lease.

**6. Source of Construction Materials:**

Surface and subsoil materials in the immediate area will be utilized.

Any gravel will be obtained from a commercial source.

**7. Methods of Handling Waste Materials:**

Drill cuttings will be contained and buried in the reserve pit.

Drilling fluids, including salts and chemicals, will be contained in the reserve pit. Upon termination of drilling and completion operations, the liquid contents of the reserve pit will be removed and disposed of at an approved waste disposal facility within 120 days after drilling is terminated.

The reserve pit will be constructed on the location and will not be located within natural drainage, where a flood hazard exists or surface runoff will destroy or damage the pit walls. The reserve pit will be constructed so that it will not leak, break, or allow discharge of liquids.

A plastic reinforced liner and felt will be used; it will be a minimum of 20 mil thick, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit. Any spills of oil, gas, salt water, or other noxious fluids will be immediately cleaned up and removed to an approved disposal site.

A chemical porta-toilet will be furnished with the drilling rig.

Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. No trash will be burned on location.

All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.

Any open pits will be fenced during the operations. The fencing will be maintained until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling of this well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the drilling of this well.

Any produced water from the proposed well will be contained in a water tank and will then be hauled By truck to one of the pre-approved disposal sites: RNI in Sec. 5 T9S R22E, NBU #159 in Sec. 35 T9S R21E, Ace Oilfield in Sec. 2 T6S R20E, MC&MC in Sec. 12 T6S R19E, Pipeline Facility in Sec. 36 T9S R20E, Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E, Bonanza Evaporation Pond in Sec. 2 T10S R23E.

**8. Ancillary Facilities:**

None are anticipated.

**9. Well Site Layout:** (See Location Layout Diagram)

The attached Location Layout Diagram describes drill pad cross-sections, cuts and fills, and locations of the mud tanks, reserve pit, flare pit, pipe racks, trailer parking, spoil dirt stockpile(s), and surface material stockpile(s).

Please see the attached diagram to describe rig orientation, parking areas, and access roads.

The reserve pit will be lined, and when the reserve pit is closed, the pit liner will be buried below plow depth.

All pits will be fenced according to the following minimum standards:

39 inch net wire will be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.

The net wire shall be no more than two inches above the ground. The barbed wire shall be three inches over the net wire. Total height of the fence shall be at least 42 inches.

Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.

Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

All wire shall be stretched, by using a stretching device, before it is attached to corner posts.

The reserve pit fencing will be on three sides during drilling operations, and on the fourth side when the rig moves off location. Pits will be fenced and maintained until cleanup.

Location size may change prior to the drilling of the well due to current rig availability. If the proposed location is not large enough to accommodate the drilling rig the location will be re-surveyed and a Form 9 shall be submitted.

**10. Plans for Reclamation of the Surface:**

*Producing Location:*

Immediately upon well completion, the location and surrounding area will be cleared of all unused tubing, materials, trash, and debris not required for production.

Immediately upon well completion, any hydrocarbons in the pit shall be removed in accordance with 43 CFR 3162.7-1.

A plastic, nylon reinforced liner will be used, it shall be torn and perforated before backfilling of the reserve pit.

Before any dirt work associated with location restoration takes place, the reserve pit shall be as dry as possible. All debris in it will be removed. Other waste and spoil materials will be disposed of immediately upon completion of operations.

The reserve pit and that portion of the location not needed for production facilities/operations will be recontoured to the approximate natural contours. The reserve pit will be reclaimed within 90 days from the date of well completion, weather permitting.

To prevent surface water(s) from standing (ponding) on the reclaimed reserve pit area, final reclamation of the reserve pit will consist of "mounding" the surface three feet above surrounding ground surface to allow the reclaimed pit area to drain effectively.

Upon completion of backfilling, leveling, and recontouring, the stockpiled topsoil will be spread evenly over the reclaimed area(s).

*Dry Hole/Abandoned Location:*

Abandoned well sites, roads, and other disturbed areas will be restored as near as practical to their original condition. Where applicable, these conditions include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions, and re-establishment of vegetation as specified.

All disturbed surfaces will be recontoured to the approximate natural contours, with reclamation of the well pad and access road to be performed as soon as practical after final abandonment. Reseeding operations will be performed after completion of other reclamation operations.

**11. Surface/Mineral Ownership:**

SITLA
675 East 500 South, Suite 500
Salt Lake City, UT 84102

**12. Other Information:**

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, the approved Plan of Operations, and any applicable Notice of Lessees. The Operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

The Operator will control noxious weeds along Rights-Of-Way for roads, pipelines, well sites, or other applicable facilities.

A Class III archaeological survey report and paleontological survey report is attached.

**13. Lessee's or Operators' Representative & Certification:**

Kathy Schneebeck Dulnoan
Staff Regulatory Analyst
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6226

Tommy Thompson
General Manager, Drilling
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by State Surety Bond 22013542.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Kathy Schneebeck Dulnoan

Kathy Schneebeck Dulnoan

*May 7, 2009*
Date

# Kerr-McGee Oil & Gas Onshore LP

1099 18th Street, Suite 1800
Denver, CO 80202-1918
P.O. Box 173779
Denver, CO 80217-3779
720-929-6000


May 5, 2009

Mrs. Diana Mason
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11
NBU 922-31F3S
T9S-R22E
Section 31: SENW
Surface: 2607' FSL, 1443' FWL
Bottom Hole: 2215' FNL, 1258' FWL
Uintah County, Utah

Dear Mrs. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to the Exception to Location and Siting of Wells.

- Kerr-McGee's NBU 922-31F3S located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

Therefore, based on the above stated information Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Jason K. Rayburn
Landman

# CLASS I REVIEW OF KERR-MCGEE OIL AND GAS ONSHORE LP'S 46 PROPOSED WELL LOCATIONS
(T9S, R22E, SEC. 29, 30, 31, 32, 33, 34; T10S, R22E, SEC. 4)
UINTAH COUNTY, UTAH

’APIWellNo:43047504190000’

# CLASS I REVIEW OF KERR-MCGEE OIL AND GAS ONSHORE LP’S 46 PROPOSED WELL LOCATIONS (T9S, R22E, SEC. 29, 30, 31, 32, 33, 34; T10S, R22E, SEC. 4) UINTAH COUNTY, UTAH

By:

Nicole Shelnut

Prepared For:

Bureau of Land Management
Vernal Field Office
and
State of Utah
School & Institutional Trust Lands Administration

Prepared Under Contract With:

Kerr-McGee Oil and Gas Onshore LP
1368 South 1200 East
Vernal, Utah 84078

Prepared By:

Montgomery Archaeological Consultants, Inc.
P.O. Box 219
Moab, Utah 84532

MOAC Report No. 08-356

February 26, 2009

United States Department of Interior (FLPMA)
Permit No. 08-UT-60122

Public Lands Policy Coordination Office
Archaeological Survey Permit No. 117

## INTRODUCTION

A Class I literature review was completed by Montgomery Archaeological Consultants, Inc. (MOAC) in February 2009 of Kerr-McGee Onshore's 46 proposed NBU well locations in Township 9S, Range 22E Sections 29, 30, 31, 32, 33, 34: Township 10S, Range 22E, Section 4. The project area is situated west of the White River in the Bitter Creek Gas Field, Uintah County, Utah. The wells are designated NBU 922-29P Directional Pad, NBU 920-29P, NBU 922-29P2DS, NBU 922-29I3DS, NBU 922-29P3AS, NBU 922-29M Directional Pad, NBU 922-29M2CS, NBU 922-29M3CS, NBU 922-29M4DS, NBU 184 (NBU 922-30N) Directional Pad, NBU 922-30N2S, NBU 280, NBU 922-31K-2TX Directional Pad, NBU 922-31F2S, NBU 922-31F3S, NBU 922-31J2S, (NBU 921-31I) Directional Pad, NBU 922-31J3AS, NBU 922-31O1AS, NBU 922-31I3CS, NBU 922-31I4AS, CIGE 106D (NBU 922-32D) Directional Pad, NBU 922-32F3T, NBU 922-32L1S, NBU 922-32K1S, NBU 922-32F2S, NBU 922-32J3 Directional Pad, NBU 922-32J4CS, NBU 922-32IT, NBU 282 Directional Pad, NBU 922-32P1BS, (NBU 922-33D) Directional Pad, NBU 922-33E2DS, NBU 922-33E3AS, NBU 922-33E3DS, NBU 922-33F3DS, NBU 922-33K2, (NBU 1022-4B) Directional Pad, NBU 922-33P2S, NBU 922-33O4S, NBU 922-33N4S, NBU 922-33P3S, (NBU 922-34E) Directional Pad, NBU 922-34C3BS, NBU 922-34D2CS, NBU 922-34D3BS, and (NBU 922-34O) Directional Pad, NBU 922-34P3CS. This document was implemented at the request of Ms. Raleen White, Kerr-McGee Onshore LP, Denver, Colorado.

The purpose of this Class I review is to identify, classify, and evaluate the previously conducted cultural resource inventories and archaeological sites in the project area in order to comply with Section 106 of 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Also, the inventory was implemented to attain compliance with a number of federal and state mandates, including the National Environmental Policy Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1990).

The project area in which Kerr-McGee Onshore's 46 proposed NBU well locations occur was previously inventoried by MOAC in 2007 for the Class III inventory of Township 9 South, Range 22 East (Montgomery and Dunn 2008) and the Class III inventory of Township 10 South, Range 22 East (Montgomery 2008). A file search was completed by consulting MOAC's Class I existing data review of 459 square miles (293,805 acres) covering the Greater NBU study area between Bonanza and Ouray in Uintah County, northeastern Utah (Patterson et al. 2008). Kerr-McGee Oil & Gas Onshore LP proposes to explore and develop oil and natural gas resources throughout the area. Record searches were performed for this Class I project by Marty Thomas at the Utah State Historic Preservation Office (SHPO) on various dates between June 14, 2006 and January 27, 2007. The results of this Class I data review and Class III inventory indicated that no previously recorded sites occur in the current project area.

## DESCRIPTION OF THE PROJECT AREA

The project area is situated west of the White River on both sides of Sand Wash in the Uinta Basin. The legal description is Township 9S, Range 22E, Sections 29, 30, 31, 32, 33, 34; Township 10S, Range 22E, Sections 3 and 4 (Figure 1, Table 1). Land status is public land administered by the Bureau of Land Management (BLM) Vernal Field Office and State of Utah School & Institutional Trust Lands Administration (SITLA).

’APIWellNo:43047504190000’

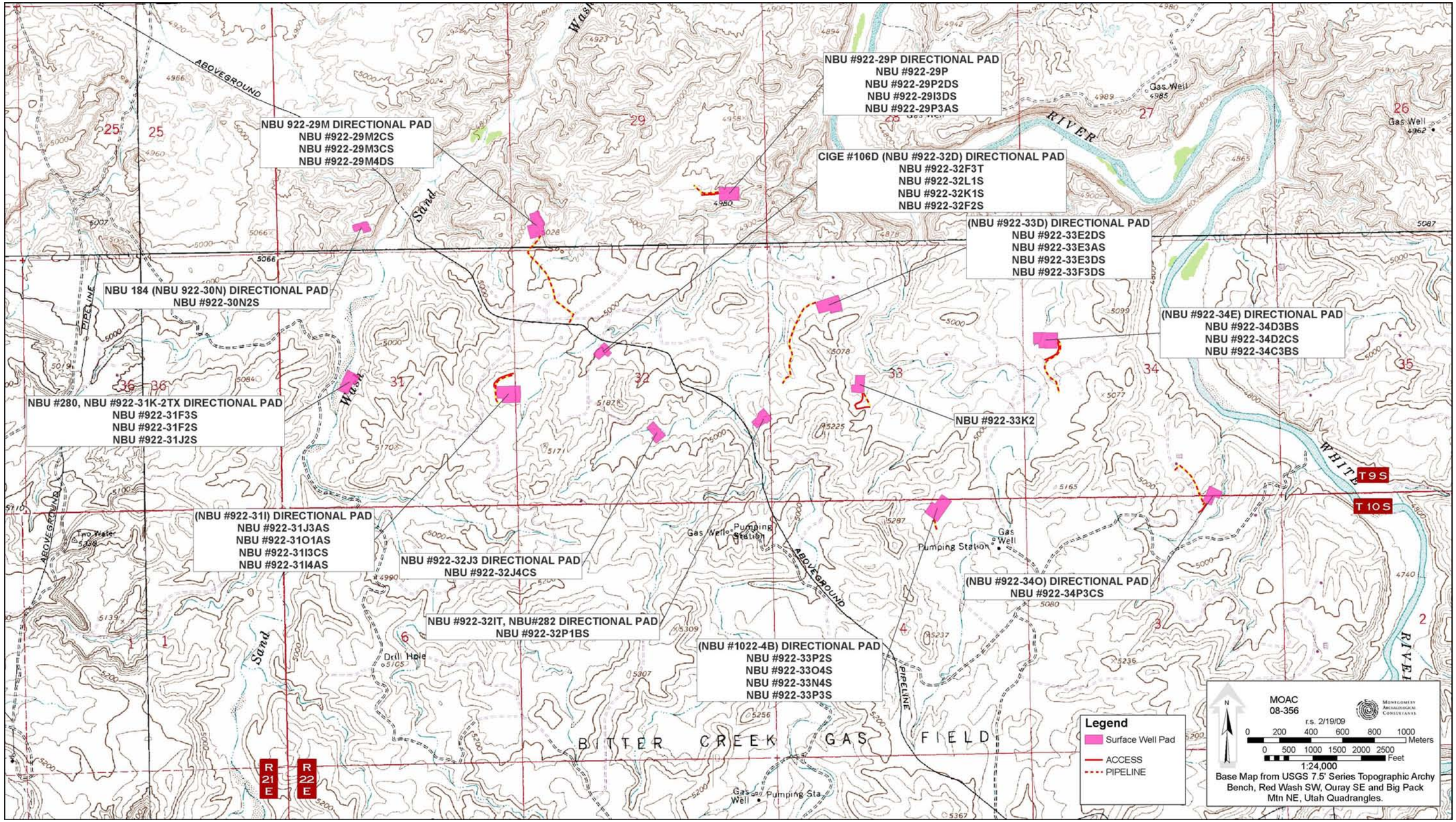



Figure 1. Kerr-McGee Oil and Gas Onshore LP’s Proposed NBU Well Locations in Uintah County, Utah.

Table 1. Kerr-McGee Onshore’s 46 NBU Well Locations.

| Well Designation | Legal Description | Access/Pipeline Corridor | Cultural Resources |
|---|---|---|---|
| NBU 922-29P Directional Pad<br>NBU 922-29P<br>NBU 922-29P2DS,<br>NBU 922-29I3DS,<br>NBU 922-29P3AS | SE/SE Sec. 29,<br>T9S, R22E | Access: 368<br>Pipeline: 577 | None |
| NBU 922-29M Directional Pad<br>NBU 922-29M2CS,<br>NBU 922-29M3CS,<br>NBU 922-29M4DS | SW/SW Sec. 29,<br>T9S, R22E | Pipeline: 2296 | None |
| NBU 922-30N Directional Pad<br>NBU 922-30N2S | SE/SW Sec. 30,<br>T9S, R22E | None | None |
| NBU 280, NBU 922-31K-2TX Directional Pad<br>NBU 922-31F2S,<br>NBU 922-31F3S,<br>NBU 922-31J2S | NE/SW Sec. 31,<br>T9S, R22E | Access: 690<br>Pipeline: 277 | None |
| (NBU 921-31I) Directional Pad<br>NBU 922-31J3AS,<br>NBU 922-31O1AS,<br>NBU 922-31I3CS,<br>NBU 922-31I4AS | NE/SE Sec. 31,<br>T9S, R22E | Access: 550 ft<br>Pipeline: 815 ft | None |
| CIGE 106D (NBU 922-32D) Directional Pad<br>NBU 922-32F3T,<br>NBU 922-32L1S,<br>NBU 922-32K1S,<br>NBU 922-32F2S | SE/NW Sec. 32,<br>T9S, R22E | None | None |
| NBU 922-32J3 Directional Pad<br>NBU 922-32J4CS | NW/SE Sec. 32,<br>T9S, R22E | None | None |
| NBU 922-32IT, NBU 282 Directional Pad<br>NBU 922-32P1BS | NE/SE Sec.32,<br>T9S, R22E | None | None |
| (NBU 922-33D) Directional Pad<br>NBU 922-33E2DS,<br>NBU 922-33E3AS,<br>NBU 922-33E3DS,<br>NBU 922-33F3DS | CT/NW Sec. 33,<br>T9S, R22E | Pipeline: 2009 ft | None |
| NBU 922-33K2 | NE/SW Sec. 33,<br>T9S, R22E | Access: 690<br>Pipeline: 277 | None |
| (NBU 922-34E) Directional Pad<br>NBU 922-34C3BS,<br>NBU 922-34D2CS,<br>NBU 922-34D3BS | SW/NW Sec. 34,<br>T9S, R22E | Access: 537 ft<br>Pipeline: 1356 ft | None |
| (NBU 922-34O) Directional Pad<br>NBU 922-34P3CS | SW/SE Sec. 34,<br>T9S, R22E | Access: 263 ft<br>Pipeline: 1120 ft | None |

| Well Designation | Legal Description | Access/Pipeline Corridor | Cultural Resources |
|---|---|---|---|
| (NBU 1022-4B) Directional Pad<br>NBU 922-33P2S,<br>NBU 922-33O4S,<br>NBU 922-33N4S,<br>NBU 922-33P3S | NW/NE Sec. 4, 10S, R22E | Access: 67 ft<br>Pipeline: 196 ft | None |

The study area lies within the Uinta Basin physiographic unit, a distinctly bowl-shaped geologic structure (Stokes 1986:231). The Uinta Basin ecosystem is within the Green River drainage, considered to be the northernmost extension of the Colorado Plateau. The geology is comprised of Tertiary age deposits, which include Paleocene age deposits and Eocene age fluvial and lacustrine sedimentary rocks. The Uinta Formation, which is predominate in the project area, occurs as eroded outcrops (formed by fluvial deposited, stream laid interbedded sandstone and mudstone), and is known for its prolific paleontological localities. Specifically, the inventory area is situated west of the White River on both sides of Sand Wash in Uintah County, Utah. Elevation ranges from 4900 to 5040 ft asl. The project occurs within the Upper Sonoran Desert Shrub Association which includes sagebrush, shadscale, greasewood, mat saltbush, snakeweed, rabbitbrush, and prickly pear cactus. Modern disturbances include livestock grazing, roads, and oil/gas development.

## CLASS I RESULTS AND RECOMMENDATIONS

The Class I literature review of Kerr-McGee Onshore's 46 proposed well locations and associated pipeline corridors in Township 9S, Range 22E and Township 10S, Range 22E resulted in the location of no cultural resources. Based on the findings, a determination of "no adverse impact" is recommended for the undertaking pursuant to Section 106, CFR 800.

## REFERENCES CITED

Montgomery, J. A.
2008 Cultural Resource Management Report for Kerr-McGee Oil and Gas Onshore LP's Greater NBU Blocks in Township 10 South Range 22 East Uintah County, Utah. Montgomery Archaeological Consultants, Moab, Utah. Report No. U-07-MQ-1438b.

Montgomery, J. A., and J. Dunn
2008 Cultural Resource Management Report for Kerr-McGee Oil and Gas Onshore LP's Greater NBU Blocks in Township 9 South, Range 22 East, Uintah County, Utah. Montgomery Archaeological Consultants, Moab, Utah. Report No. U-07-MQ-0461.

Patterson, J. J., J. Fritz, K. Lower-Eskelson, R. Stash and A. Thomas
2008 NBU Class I Existing Data Review for Kerr-McGee Oil & Gas Onshore LP, Uintah County, Utah. Montgomery Archaeological Consultants, Moab, Utah.

Stokes, W. L.
1986 *Geology of Utah*. Utah Museum of Natural History and Utah Geological and Mineral Survey, Salt Lake City.

# Paleontological Assessment for Anadarko Petroleum Corp.

# NBU #922-31F3S, 31F2S, 31J2S

Archy Bench Quadrangle

Uintah County, Utah

Prepared for

Anadarko Petroleum Corp.
and
School and Institutional Trust Land Administration

Prepared by

SWCA Environmental Consultants

03/16/2009
SWCA #UT09-14314-02

’APIWellNo:43047504190000’

**Paleontological Assessment for Anadarko Petroleum Corp.**
**NBU #922-31F3S, 31F2S, 31J2S Proposed Extension of Existing Well Pad**

Prepared for

**Anadarko Petroleum Corp.**
Granite Tower
1099 18th St. #1200
Denver, CO 80202

and

**State of Utah**
**School & Institutional Trust Lands Administration**
675 East 500 South, Suite 500
Salt Lake City, UT 84102-2818

Prepared by:

**Benjamin John Burger, M.S., Justin J. Strauss, M.S., Paul C. Murphey, Ph.D.**
**Utah State Permit 07-363**

SWCA Environmental Consultants
2028 West 500 North
Vernal, UT 84078
Phone: 435.789.9388
Fax: 435.789.9385
www.swca.com

SWCA #UT09-14314-02

**03/16/09**

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# 1.0 PROJECT SUMMARY

- Paleontological assessment conducted at the request of Anadarko Petroleum Corp. and the State of Utah School & Institutional Trust Lands Administration (SITLA). Performed by SWCA Environmental Consultants.
    - Utah State Permit 07-363

- Paleontological records search and field survey for the expansion of a pre-existing well pad to accommodate three new wells.

- Field survey of proposed well pad and access route completed on 03/03/09 within NE ¼ SW ¼ of Section 31, T9S, R22E in Uintah County, Utah (USGS 7.5 Minute Archy Bench quadrangle).
    - 100-foot survey buffer around well pad.

- Geology
    - Geologic Units (mapped and observed):
        - Lower unit of the Uinta Formation (PFYC Class 5)

- Paleontology
    - No previous localities known in APE.
    - No new fossil localities discovered in area.

- Recommendation
    - **Clearance without further mitigation for well pad.**
    - If any subsurface bones or other potential fossils are encountered during construction anywhere within the project area, work in the immediate vicinity should cease, the BLM should be notified, and a qualified and BLM-permitted paleontologist should inspect the location before work continues.

- Distribution of Survey Report
    - Hard copies sent SITLA and Anadarko Petroleum Corp. Hard copy and electronic copies on file at the SWCA Vernal office.

# 2.0 INTRODUCTION

At the request of Anadarko Petroleum Corp. and the Bureau of Land Management SWCA Environmental Consultants conducted a paleontological records search and field survey for the expansion of a preexisting well pad (NBU# 922-31K-2TX) to accommodate three new wells (NBU#922-31F3S, 31F2S, 31J2S).

The proposed well pad expansion is located in Section 31, T9S, R22E in Uintah County, Utah (USGS 7.5 Minute Archy Bench quadrangle; See Map 1).

## 2.1 Laws, Regulations and Standards

Various laws, regulations, and standards govern how fossils on public lands maybe collected and preserved for future generations. The School and Institutional Trust Lands Administration (Utah State Owned Property) requires a permit and repository agreement with Utah Museum of Natural History for the curation and storage of all "critical paleontological resources" found on Trust Lands (Utah Division of Administrative Rules 807). Furthermore, the state of Utah requires oil, gas and hydrocarbon lessees to provide a paleontological surveys, when requested, prior to project approval (Utah Division of Administrative Rules 850-21-700). A paleontological survey helps to ensure that proposed land use projects do not inadvertently damage or destroy "critical" paleontological resources on state trust lands. This report was prepared in order to describe the known paleontological resources in the area of potential effect for this project, and includes mitigation recommendations.

# 3.0 METHODS

The paleontological survey and evaluation procedures for this assessment were conducted according to State guidelines under Utah State Permit 07-363.

## 3.1 Personnel

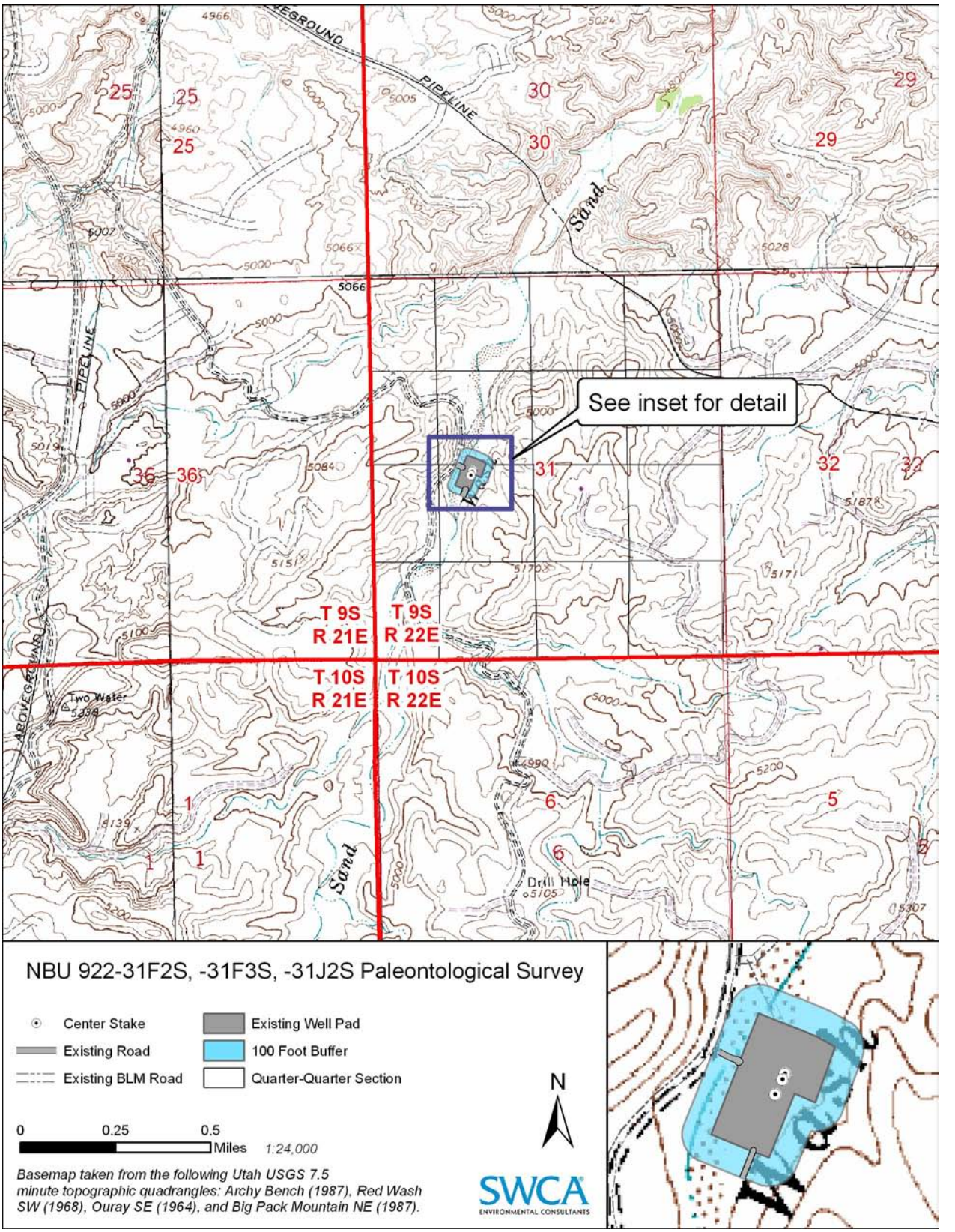
Benjamin J.Burger and Justin Strauss completed the field survey, conducted the file search and prepared the final report. Dr. Paul Murphey Principal Investigator on the BLM permit under which this survey was conducted reviewed the final report.

## 3.2 Records Search Methods

Records searches were conducted in order to 1) determine whether any previously recorded fossil localities occur within the project areas; 2) assess the potential for disturbance of these localities during construction; and 3) evaluate the paleontological sensitivity within the area of potential effect (APE). Electronic paleontological records maintained by the Utah Geological Survey, Paleontology Department were searched in order to determine the presence of previously documented fossil localities within the project APE.

## 3.3 Resource Assessment Methods

Geological units are assigned a Potential Fossil Yield Classification System (PFYC) number by the BLM Regional Paleontologists based upon the known paleontology resources from the geological unit and the potential for future significant fossils to be discovered.




**Map 1. Location of Anadarko Petroleum Corp. Proposed 3 wells to be drilled NBU 922-31F3S, 31F2S, and 31 J2S (on existing well pad NBU#922-31K-2TX).**

## 3.4 Field Methods

The survey was designed to 1) determine the surface presence of previously unknown significant vertebrate fossils and/or noteworthy occurrences of invertebrate, plant, or trace fossils; 2) evaluate the condition of documented paleontological localities and the potential for disturbance of these localities during the proposed construction; and 3) evaluate potential adverse impacts to subsurface paleontological resources during construction.

The paleontological field survey consisted of the area within the staked expansion of the well pad plus a 100-foot-wide buffer around the well pad. The APE was inspected for 1) surface fossils; 2) exposures of potentially fossiliferous rocks; and 3) areas in which fossiliferous rocks will be exposed or otherwise impacted during construction. The survey was 100% pedestrian of outcrop.

A paleontological locality documents the location, identification and description of a scientifically significant fossil(s) along with its geologic context. In addition, however, we record the presence of highly weathered, fragmentary or otherwise unidentifiable fossils as non-significant fossil occurrences which typically consist of fragments of turtle shell, unidentifiable bone and tooth fragments, and unidentifiable plant fossils in order to communicate the presence of fossils in a manner that does not trigger mitigation measures. Typically, fossil locality forms and maps are provided only for significant fossil localities which are either collected at the time of discovery or recommended for avoidance and/or later mitigation.

## 3.5 Distribution of Data

Copies of this report will be submitted to BLM and Anadarko Petroleum Corp. Any newly recorded locality data will be submitted to the Utah Geological Survey, State Paleontologist. A hard-copy file will be retained at SWCA Environmental Consultants, Vernal office, along with relevant field notes, maps, and other data.

# 4.0 GEOLOGY AND PALEONTOLOGY

The East-West trending Uinta Mountains were uplifted during the Rocky Mountain-forming Laramide orogeny (Rasmussen et al. 1999) in the Paleocene Epoch (Stokes 1986), exposing the Paleozoic-age rocks in the core of the mountains and Mesozoic-age rocks along their flanks. In conjunction with the uplift, the southerly-adjacent synclinal Uinta Basin formed (Rasmussen et al. 1999). From the Paleocene to the middle Eocene, sediments from freshwater lakes and later from river channels, river deltas and floodplains filled the basin with sediments and accompanying fossils (Stokes 1986, Townsend 2004). From oldest to youngest, these rock units include the Wasatch, Green River, Uinta and Duchesne River formations. Collectively, these units represent the primary source of middle Eocene-aged vertebrate, invertebrate and plant fossils from Utah and Colorado, and are thus of great scientific importance. Locally, Pleistocene- and Holocene-aged sediments deposited by rivers, streams, gravity, and wind overlie the bedrock geologic units.

The project APE contains one mapped geologic unit (Rowley et al 1995): Eocene-age lower Uinta Formation.

## 4.1 Uinta Formation

The middle Eocene Uinta Formation preserves a rich fossil record extending from about 46.5 to 40 million years ago (Prothero 1996). During this period, Earth's climate slowly cooled from the previously intense warm period of the early Eocene (Zachos et al. 2001). Many fossil mammals from the Uinta Formation represent a mix of modern and ancient forms (Scott and Osborn 1890; Peterson 1919; Robinson et al. 2004; Townsend 2004).

Fossil mammals known from the Uinta Formation include the carnivorous mammals *Mesonyx* and *Harpagolestes*, members of the Mesonychidae, an extinct family of mammals distantly related to whales and even-toed hoofed mammals. Mesonychids exhibit large sharp teeth and claws with the superficial appearance of modern wolves (Scott 1888; Peterson 1931). The Uinta Formation also produces remains of large six horned, saber toothed beasts call *Uintatheres*. As a member of the long extinct mammalian order Dinocerata, *Uintathere* fossils are featured in many museum exhibits (Wheeler 1961). Another large but uncommon mammal fossil known from the Uinta Formation is the early chalicothere *Eomorpus*. Long extinct, chalicotheres are a group of perissodactyl (odd toed ungulate) mammals that featured long forelegs equipped with claws used to strip vegetation for food, yet retained a horse like skull. A small fossil mammal known from the Uinta Formation is *Apatemys*, an arboreal animal with long anterior incisors adapted to feed on bark grubs and other insects. The Uinta Formation also preserves some of the last remaining early primates in North America (Townsend, 2004), including the omomyid primates *Macrotarsius, Ourayia, Trogolemur* and the more recently described *Chipetaia* (Rasmussen 1996). Primates would eventually vanish from North America as the climate continued to cool into the Oligocene Epoch (about 35 million years ago; Townsend 2004). The small bodied hyaenodontid creodonts, a sister group to modern carnivores co-occur with early ancestors of modern cats and dogs including *Procynodictis*, *Tapocyon* and *Prodaphaenus* in the Uinta Formation (Flynn and Galiano 1982, Townsend 2004). Other fossil mammals known from the Uinta Formation include a great diversity of rodents, representing six families (Robinson et al. 2004), and the earliest North American rabbit *Mytonolagus* (Dawson 1970). The Uinta Formation also preserves an excellent record of the early diversification of Artiodactyls (even toed ungulates) including the early camel *Poëbrodon* and the deer-like *Leptotragulus* (Gazin 1955). Remains of Perissodactyls are equally diverse, including the early rhino *Amynodon*, the tapiriod *Colodon*, early horse *Epihippus* (Granger 1908), as well numerous large brontotheres (Riggs 1912; Osborn 1929).

More common than mammal fossils, reptile remains from the Uinta Formation include a rich record of turtles including *Baena*, *Echmatemys* and *Trionyx*. Fossil teeth, bones and osteoderms of ancient crocodiles are common throughout the formation.

Because of its diverse and locally abundant mammalian fossils, the Uinta Formation was designated as the stratotype for the Uintan North American Land Mammal Age (Wood et al. 1940). Subsequently, Uintan aged strata have been documented at other locations in North America using the exceptional fossil record of the Uinta Formation in the Uinta Basin for comparison (Flynn 1986, Walsh 1996; Townsend 2004; Murphey and Evanoff 2007).

The following museums have fossils from the Uinta Formation in their collections:

American Museum of Natural History, New York, New York.
Carnegie Museum of Natural History, Pittsburgh, Pennsylvania.
Smithsonian National Museum of Natural History, Washington, D.C.
Vernal Field House of Natural History, Vernal, Utah.
Yale Peabody Museum, New Haven, Connecticut.

Smaller collections are known from:
Brigham Young University Earth Science Museum, Provo, Utah.
Utah Museum of Natural History, Salt Lake City, Utah.
Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
Field Museum of Natural History, Chicago, Illinois.
University of Colorado Museum of Natural History, Boulder, Colorado.

Lithologically, the Uinta Formation consists of greenish-gray, reddish-brown, yellow, grayish-orange, and purple fluvial and lacustrine shale marlstone, siltstone, and sandstone beds which are locally tuffaceous (Cashion 1973; Dane 1954; Rowley et al. 1985). In general terms, the Uinta Formation conformably overlies and interfingers with the Green River Formation in the Uinta and Piceance Creek Basins, and is overlain by the Duchesne River Formation in the Uinta Basin. Despite its historical and scientific importance to vertebrate paleontology, the detailed stratigraphy of the Uinta Formation is complex and not yet fully understood.

Named by Marsh (1871), geologists have subdivided the Uintan Formation from stratigraphically lowest to highest into three horizons A, B, and C. The A and B horizons represents the Wagonhound Member of the Uinta Formation, and the C horizon represents the Myton Member. The mudstone and claystone-dominated horizons (Uinta B and C) contain many well preserved fossil remains, while fossils recovered from the sandstone dominated horizon (Uinta A) are less well preserved and rare. The specific location of these subunit boundaries has shifted slightly with almost each successive publication on the stratigraphy of the area, resulting in a well-understood broad picture for which the stratigraphic details are hazy and the biostratigraphy unresolved (Walsh 1996). The most recent stratigraphic and paleontologic work in the Uinta Formation has included important efforts to better characterize and document the lithostratigraphy, biostratigraphy paleoecology, and paleoenvironments of the Uinta Formation and time-equivalent strata (see Rasmussen et al. 1999; Townsend 2004; Walsh 1996; Townsend et al. 2006). Documentation of where fossils are recovered within the Uinta Formation remains essential for understanding how life and the environment changed during this long interval of time.

# 5.0 RESULTS

The following section presents the results of the records search and field survey conducted for the Anadarko Petroleum Corp. for the expansion of a preexisting well pad.

## 5.1 Previously Documented Localities

The nearest important fossil locality is located 0.38 miles toward the north-west direction from the proposed pad extension. This locality yielded remains of the agriochoerid artiodactyl *Protoreodon*, brontothere postcranial elements, and abundant turtle bone and shell fragments. Twelve previously recorded fossil localities are reported within a 1-mile radius of the proposed well pad extension, most of which are located above the Sand Wash Creek where the well is located. None of these previously recorded fossil localities are located within the APE.

## 5.2 Paleontological Sensitivities

The paleontological sensitivity of the one mapped geologic unit (Rowley et al 1995) in the project APE has been classified according to the PFYC by the BLM and is summarized in Table 1.

**Table 1. Paleontological Sensitivities of Geologic Units Within the Project APE.**

| Geologic Unit | Map Symbol* | Age | Typical Fossils | PFYC |
|---|---|---|---|---|
| Uinta Formation, lower part | Tul | Eocene | Locally abundant plants (leaves, seeds, wood); invertebrates (insects, mollusks); and a highly diverse and scientifically important vertebrate fauna (reptiles, mammals) | Class 5 |

* Rowley et al 1995

## 5.3 Field Survey

| **922-31F3S, 31F2S, 31J2S** | **Well pad extension on preexisting well pad** |
|---|---|
| **Location:** | NE ¼ SW ¼ Section 31, T9S, R22E |
| **Surveyed on:** | 3/3/2009 **By:** Ben Burger and Justin Strauss |
| **Survey Remarks:** | 100% pedestrian survey of existing well pad with proposed 3 new wells and new pit. |
| **Photos:** | Figures 1-5 |
| **Geologic Formation(s):** | Uinta Fm, lower Mbr Eocene PFYC Class 5 |
| **Reference:** | Rowley et al 1995 |
| **Topography:** | Located within Sand Wash, against the eastern wall. |
| **Bedrock Exposure Status:** | Extensive bedrock exposure along eastern side of pad forming a large cliff. |
| **Geologic Description:** | Coarsed grained fluvial sandstone, lag deposits up to 1 cm diameter, dark brown to black clasts, interbedded with gray-green and red-brown mudstones and claystones. |
| **Fossil Status:** | None |
| **Fossil Description:** | N/A |
| **Recommendation:** | Immediate paleontological clearance.<br>However, if any subsurface bones or other potential fossils are encountered during construction anywhere within the project area, work in the immediate vicinity should cease, the BLM should be notified, and a qualified and BLM-permitted paleontologist should inspect the location *before* work continues. |

**Figure 1. View from center stake, facing north.**

**Figure 2. View from center stake facing east. Note extensive badlands exposures forming large cliff against well pad's eastern edge.**

**Figure 3. View from center stake, facing south.**

**Figure 4. View from center stake, facing west.**

**Figure 5. View of ground at center stake.**

# 6.0 REFERENCES

Bureau of Land Management (BLM). 2007. Instructional Memorandum 2008-009, Potential Fossil Resource Classification System.

Cashion, W. B. 1973. Geologic and structure map of the Grand Junction quadrangle, Colorado and Utah: U.S. Geological Survey, Miscellaneous Geologic Investigations Map I-736 (1:250,000).

Dane, C. H. 1954. Stratigraphic and facies relationships of upper part of Green River Formation and lower part of Uinta Formation in Duchesne, Uintah, Wasatch Counties, Utah: American Association of Petroleum Geologists Bulletin, 38(2): 405-425.

Dawson, M. 1970. Paleontology and geology of the Badwater Creek area, central Wyoming. Part 6. The leporid *Mytonolagus* (Mammalia, Lagomorpha). Annals of Carnegie Museum 7:215-230.

Flynn, J. J. 1986. Correlation and geochronology of Middle Eocene strata from the western United States. Palaeogeography, Palaeoclimatology, Palaeoecology 55:335-406.

Flynn, J. J. and Galiano, H. 1982. Phylogeny of early Tertiary Carnivora, with a description of a new species of *Protictis* from the Middle Eocene of northwestern Wyoming. American Museum Novitates 2725:1-64.

Gazin, C. L. 1955. A review of the upper Eocene Artiodactyla of North America. Smithsonian Miscellaneous Collections 128(8):1-96.

Granger, W. 1908. A revision of the American Eocene horses. Bulletin of the American Museum of Natural History 14:221-264.

Marsh, O.C. 1871. Notice of some new fossil reptiles from the Cretaceous and Tertiary formations. American Journal of Science and Arts 4:122-28,202-24.

Murphey, P.C., and Evanoff, E. 2007. Stratigraphy, fossil distribution and depositional environments of the upper Bridger Formation (middle Eocene), southwestern Wyoming: Wyoming State Geological Survey Report of Investigation 57, 107 p, (1 map, scale 1:100,000; 10 maps, scale 1:24,000).

Osborn, H. F. 1895. Fossil mammals of the Uinta Basin, Expedition of 1894. Bulletin of the American Museum of Natural History 7:71-105.

Osborn, H. F., 1929. The titanotheres of ancient Wyoming, Dakota, and Nebraska. U.S. Geologic Survey Monograph 1:1-701.

Peterson, O. A. 1919. Report upon the material discovered in the Upper Eocene of the Uinta Basin by Earl Douglas in the years 1908-1909, and by O. A. Peterson in 1912. Annals of Carnegie Museum 12(2):40-168.

Peterson, O. A. 1931. New mesonychids from the Uinta. Annals of the Carnegie Museum.16:333-339.

Prothero, D. R., 1996. Magnetic Stratigraphy and Biostratigraphy of the Middle Eocene Uinta Formation, Uinta Basin, Utah. *In*: D. R. Prothero and R. J. Emry (eds.): The Terrestrial Eocene-Oligocene Transition in North America. Cambridge University Press, pp. 75-119.

Rasmussen, D. T. 1996. A new Middle Eocene omomyine primate from the Uinta Basin, Utah. Journal of Human Evolution 31:75-87.

Rasmussen, D. T., G. C. Conroy, A. R. Friscia, K. E. Townsend, and M. D. Kinkel. 1999. Mammals of the middle Eocene Uinta Formation. *In:* Gillette, D.E. (ed.). Vertebrate Paleontology in Utah: Utah Geological Survey Miscellaneous Publication, 99-1: 401-420.

Riggs, E. S., 1912. New or little known titanotheres from the Lower Uintah Formations. Field Museum of Natural History Geological Series 159*:*17-41.

Robinson, P., Gunnell, G. F., Walsh, S. L., Clyde, W. C., Storer, J. E., Stucky, R. K., Froehilich, D. J., Ferrusquia-Villafranca, I., McKenna, M. C. 2004. Wasatchian through Duchesnean Biochronology. *In*: Woodburne, M. O. (ed.): Late Cretaceous and Cenozoic Mammals of North America; Biostratigraphy and geochronology, pp. 106-155.

Rowley, P. D., W. R. Hansen, O. Tweto, and P. E. Carrara. 1985. Geologic map of the Vernal 1° X 2° Quadrangle, Colorado, Utah and Wyoming: U.S. Geological Survey Miscellaneous Investigations Map I-1526 (scale 1:250,000).

Scott, W. B. 1888. On some new and little known creodonts. Journal of the Academy of Natural Sciences Philadelphia 9:155-185.

Scott, W. B. and Osborn, H. F., 1890. The Mammalia of the Uinta Formation. Transactions of the American Philosophical Society 1887:255-264.

Stokes, W. L. 1986. Geology of Utah: Utah Museum of Natural History, University of Utah and Utah Geological and Mineral Survey, Department of Natural Resources.

Stucky, R. K. 1992. Mammalian faunas in North America of Bridgerian to Arikareean "ages" (Eocene and Oligocene): *In*: D. R. Prothero and W. A. Berggren (eds.): Eocene-Oligocene Climatic and Biotic Evolution. Princeton, N.J.: Princeton University Press, pp. 463-93.

Townsend, K. E. 2004. Stratigraphy, paleoecology, and habitat change in the middle Eocene of North America: Unpublished dissertation, Washington University, 418 pp.

Townsend, K. E., Friscia, A. R., Rasmussen, D. T. 2006. Stratigraphic Distribrution of Upper Middle Eocene Fossil Vertebrate Localities in the Eastern Uinta Basin, Utah, with comments on Uintan Biostratigraphy. The Mountain Geologist 43(2):115-134.

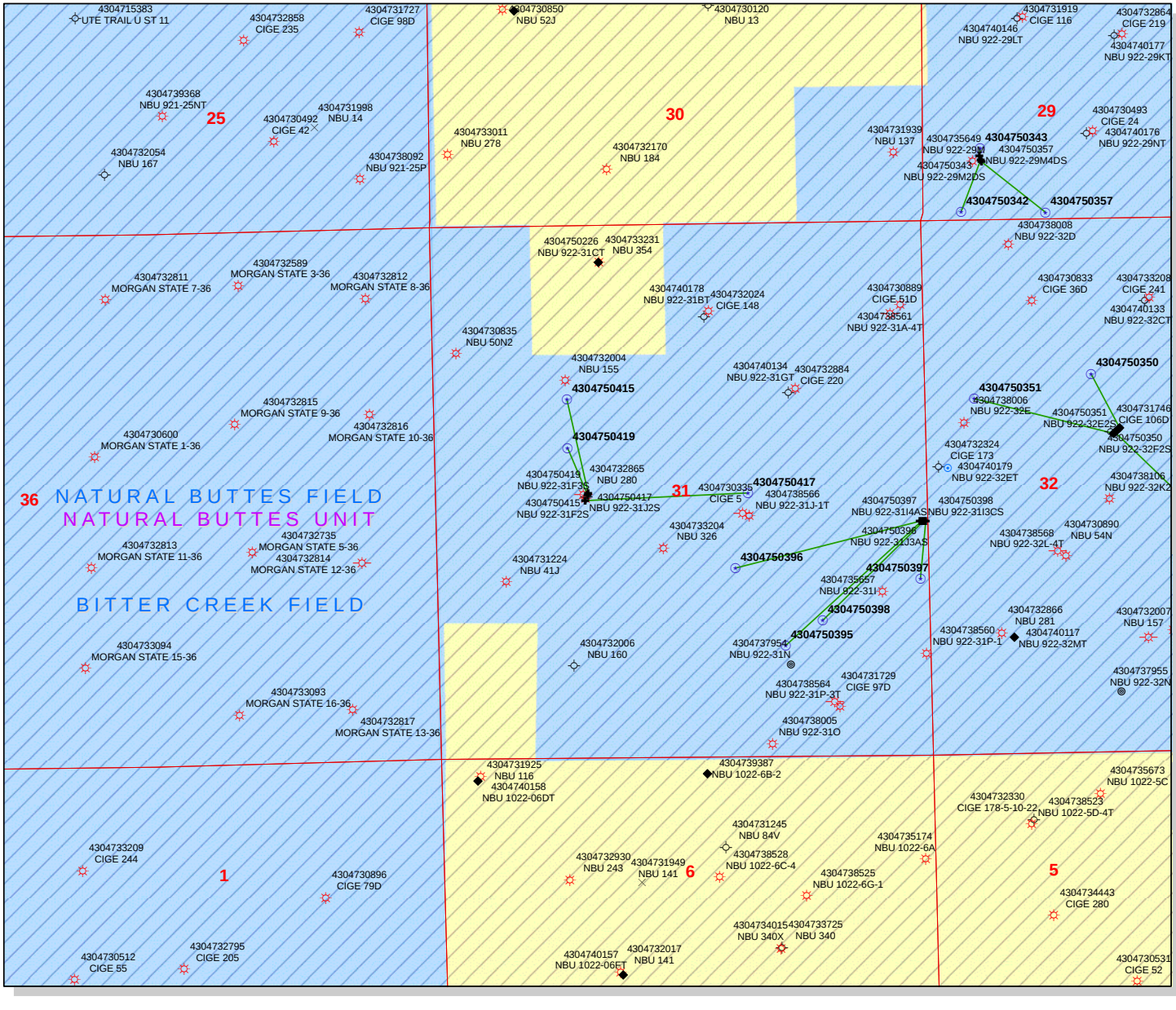
Walsh, S. L. 1996. Middle Eocene mammalian faunas of San Diego County, California. *In:* D. R. Prothero and R. J. Emry (eds.): The Terrestrial Eocene-Oligocene Transition in North America. Cambridge: Cambridge University Press, p. 75-119.

Wheeler, W.H. 1961. Revision of the Uintatheres. Bulleton of the Peabody Museum of Natural History, p. 93.

Wood, H. E., R. W. Chaney, J. Clark, E. H. Colbert, G. L. Jepsen, J. B. Reeside, Jr., and C. Stock. 1941. Nomenclature and correlation of the North American continental Tertiary. Bulletin of the Geological Society of America, 52:1-48.

Utah Division of Administrative Rules (http://www.rules.utah.gov/) accessed 3/6/2009.

Zachos, J., Pagani, M., Sloan, L., Thomas, E. and Billips, K. 2001. Trends, rhythms, and aberrations in global climate 65 Ma to present. Science 292:686-693.




**API Number: 4304750419**

**Well Name: NBU 922-31F3S**

**Township 09.0 S Range 22.0 E Section 31**

**Meridian: SLBM**

Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:
Map Produced by Diana Mason

**Units**

**STATUS**
- ACTIVE
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

**Fields**

**STATUS**
- ACTIVE
- COMBINED
- Sections

**Wells Query Events**
- <all other values>

**GIS_STAT_TYPE**
- <Null>
- APD
- DRL
- GI
- GS
- LA
- NEW
- OPS
- PA
- PGW
- POW
- RET
- SGW
- SOW
- TA
- TW
- WD
- WI
- WS


1,200 600 0 1,200 Feet

1:12,000

**From:** Jim Davis
**To:** Bonner, Ed; Mason, Diana
**Date:** 6/1/2009 8:12 AM
**Subject:** Well approvals. 3 for Anadarko.

**CC:** Garrison, LaVonne

The following wells have been approved by SITLA including arch and paleo clearance.

NBU 922-31F2S (4304750415)
NBU 922-31J2S (4304750417)
NBU 922-31f3S (4304750419)

-Jim

Jim Davis
Utah Trust Lands Administration
jimdavis1@utah.gov
Phone: (801) 538-5156

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
**Utah State Office**
**P.O. Box 45155**
**Salt Lake City, Utah 84145-0155**

**IN REPLY REFER TO:**
**3160**
**(UT-922)**

June 5, 2009

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2009 Plan of Development Natural Buttes Unit Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2009 within the Natural Buttes Unit, Uintah County, Utah.

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ WASATCH-MESA VERDE) | | |
| 43-047-50415 | NBU 922-31F2S | Sec 31 T09S R22E 2626 FSL 1451 FWL<br>BHL Sec 31 T09S R22E 1737 FNL 1258 FWL |
| 43-047-50417 | NBU 922-31J2S | Sec 31 T09S R22E 2552 FSL 1420 FWL<br>BHL Sec 31 T09S R22E 2611 FSL 1837 FEL |
| 43-047-50419 | NBU 922-31F3S | Sec 31 T09S R22E 2607 FSL 1443 FWL<br>BHL Sec 31 T09S R22E 2215 FNL 1258 FWL |
| 43-047-50428 | NBU 1022-18I4BS | Sec 18 T10S R22E 0213 FSL 0292 FEL<br>BHL Sec 18 T10S R22E 1690 FSL 0580 FEL |
| 43-047-50429 | NBU 1022-18O1AS | Sec 18 T10S R22E 0231 FSL 0301 FEL<br>BHL Sec 18 T10S R22E 1115 FSL 1400 FEL |
| 43-047-50430 | NBU 1022-18P1DS | Sec 18 T10S R22E 0196 FSL 0283 FEL<br>BHL Sec 18 T10S R22E 0855 FSL 0050 FEL |
| 43-047-50431 | NBU 1022-18P4AS | Sec 18 T10S R22E 0178 FSL 0274 FEL<br>BHL Sec 18 T10S R22E 0505 FSL 0050 FEL |
| 43-047-50446 | NBU 922-32J4CS | Sec 32 T09S R22E 1453 FSL 2398 FEL<br>BHL Sec 32 T09S R22E 1463 FSL 1902 FEL |
| 43-047-50461 | NBU 1022-24O2S | Sec 24 T10S R22E 0684 FSL 2016 FEL |

BHL Sec 24 T10S R22E 1060 FSL 2080 FEL

This office has no objection to permitting the wells at this time.

/s/ Michael L. Coulthard

bcc: File – Natural Buttes Unit
Division of Oil Gas and Mining
Central Files
Agr. Sec. Chron
Fluid Chron

MCoulthard:mc:6-5-09

**BOPE REVIEW KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 922-31F3S 43047504190000**

| Well Name | KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 922-31F3S 43047504190 | | | |
|---|---|---|---|---|
| String | Surf | Prod | | |
| Casing Size(") | 9.625 | 4.500 | | |
| Setting Depth (TVD) | 2140 | 9220 | | |
| Previous Shoe Setting Depth (TVD) | 0 | 2140 | | |
| Max Mud Weight (ppg) | 8.3 | 11.6 | | |
| BOPE Proposed (psi) | 500 | 5000 | | |
| Casing Internal Yield (psi) | 3520 | 7780 | | |
| Operators Max Anticipated Pressure (psi) | 5457 | 11.4 | | |

| Calculations | Surf String | 9.625 | " |
|---|---|---|---|
| Max BPH (psi) | .052*Setting Depth*MW= | 927 | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | 670 | NO |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | 456 | YES OK |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 456 | NO Reasonable depth in area |
| Required Casing/BOPE Test Pressure= | | 2140 | psi |
| *Max Pressure Allowed @ Previous Casing Shoe= | | 0 | psi *Assumes 1psi/ft frac gradient |

| Calculations | Prod String | 4.500 | " |
|---|---|---|---|
| Max BPH (psi) | .052*Setting Depth*MW= | 5562 | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | 4456 | YES |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | 3534 | YES OK |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 4004 | NO Reasonable, note max allowed pressure |
| Required Casing/BOPE Test Pressure= | | 5000 | psi |
| *Max Pressure Allowed @ Previous Casing Shoe= | | 2140 | psi *Assumes 1psi/ft frac gradient |

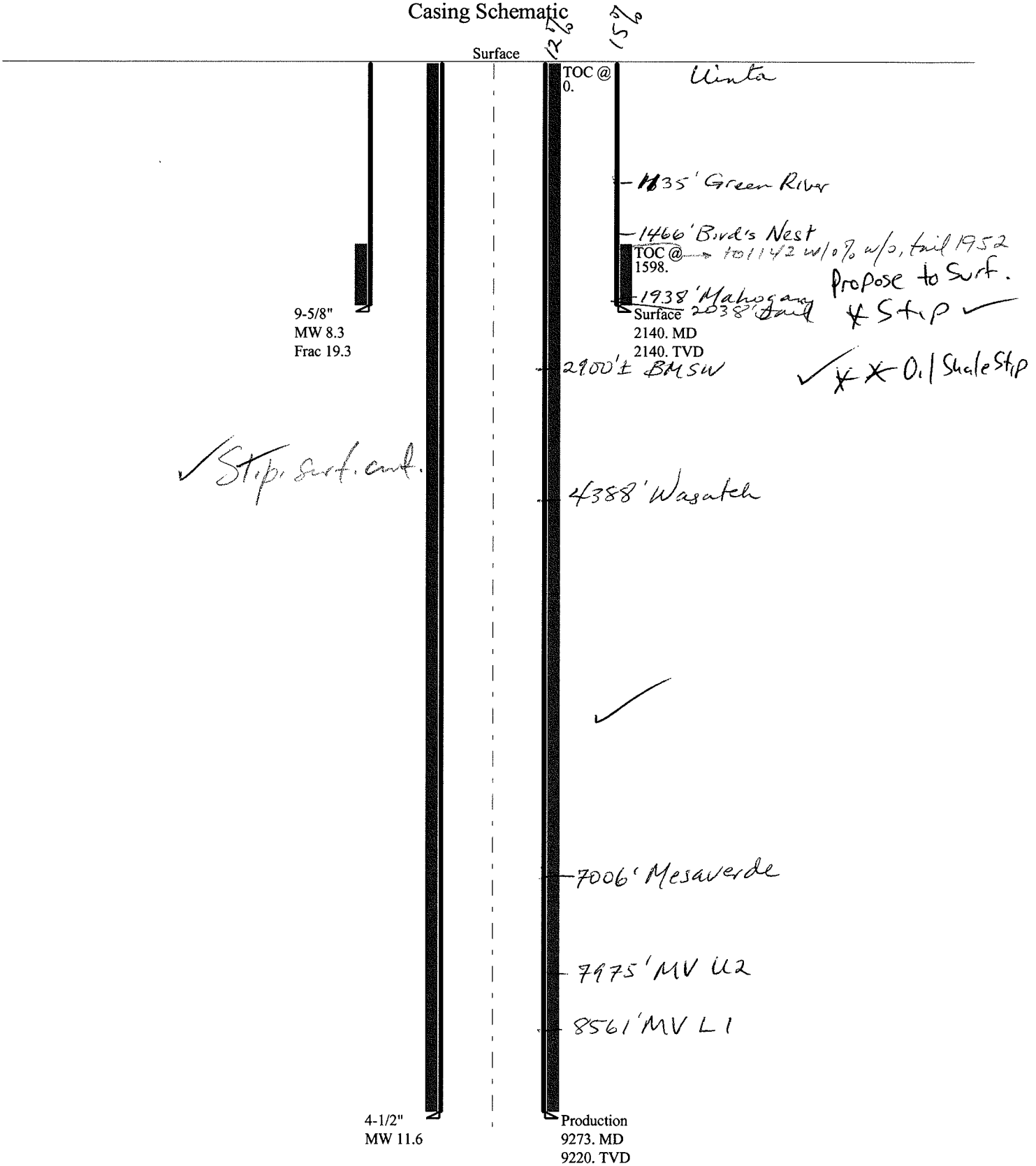
| Calculations | String | | " |
|---|---|---|---|
| Max BPH (psi) | .052*Setting Depth*MW= | | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | | NO |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | | NO |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | | NO |
| Required Casing/BOPE Test Pressure= | | | psi |
| *Max Pressure Allowed @ Previous Casing Shoe= | | | psi *Assumes 1psi/ft frac gradient |

| Calculations | String | | " |
|---|---|---|---|
| Max BPH (psi) | .052*Setting Depth*MW= | | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | | NO |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | | NO |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | | NO |
| Required Casing/BOPE Test Pressure= | | | psi |
| *Max Pressure Allowed @ Previous Casing Shoe= | | | psi *Assumes 1psi/ft frac gradient |

'APIWellNo:43047504190000'

# 43047504190000 NBU 922-31F3S

## Casing Schematic



'APIWellNo:43047504190000'

| | |
|---|---|
| Well name: | **43047504190000 NBU 922-31F3S** |
| Operator: | **KERR-MCGEE OIL & GAS ONSHORE, L.P.** |
| String type: | Surface |
| Project ID: | 43-047-50419 |
| Location: | UINTAH COUNTY |

**Design parameters:**

**Collapse**
Mud weight: 8.330 ppg
Design is based on evacuated pipe.

**Burst**
Max anticipated surface pressure: 1,883 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 2,140 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**
Design factor 1.125

**Burst:**
Design factor 1.00

**Tension:**
8 Round STC: 1.80 (J)
8 Round LTC: 1.70 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Tension is based on air weight.
Neutral point: 1,876 ft

**Environment:**
H2S considered? No
Surface temperature: 74 °F
Bottom hole temperature: 104 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 100 ft

Cement top: 1,598 ft

**Non-directional string.**

**Re subsequent strings:**
Next setting depth: 9,217 ft
Next mud weight: 11.600 ppg
Next setting BHP: 5,554 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 2,140 ft
Injection pressure: 2,140 psi

| Run Seq | Segment Length (ft) | Size (in) | Nominal Weight (lbs/ft) | Grade | End Finish | True Vert Depth (ft) | Measured Depth (ft) | Drift Diameter (in) | Est. Cost ($) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2140 | 9.625 | 36.00 | J-55 | LT&C | 2140 | 2140 | 8.796 | 17500 |

| Run Seq | Collapse Load (psi) | Collapse Strength (psi) | Collapse Design Factor | Burst Load (psi) | Burst Strength (psi) | Burst Design Factor | Tension Load (kips) | Tension Strength (kips) | Tension Design Factor |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 926 | 2020 | 2.181 | 2140 | 3520 | 1.64 | 77 | 453 | 5.88 J |

Prepared by: Helen Sadik-Macdonald
Div of Oil,Gas & Mining
Phone: 801 538-5357
FAX: 801-359-3940
Date: June 18,2009
Salt Lake City, Utah

Remarks:
Collapse is based on a vertical depth of 2140 ft, a mud weight of 8.33 ppg The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

*Engineering responsibility for use of this design will be that of the purchaser.*

'APIWellNo:43047504190000'

| | |
|---|---|
| Well name: | **43047504190000 NBU 922-31F3S** |
| Operator: | **KERR-MCGEE OIL & GAS ONSHORE, L.P.** |
| String type: | Production |
| Project ID: | 43-047-50419 |
| Location: | UINTAH COUNTY |

**Design parameters:**

**Collapse**
Mud weight: 11.600 ppg
Design is based on evacuated pipe.

**Burst**
Max anticipated surface pressure: 3,528 psi
Internal gradient: 0.220 psi/ft
Calculated BHP 5,556 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**
Design factor 1.125

**Burst:**
Design factor 1.00

**Tension:**
8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.60 (B)

Tension is based on air weight.
Neutral point: 7,674 ft

**Environment:**
H2S considered? No
Surface temperature: 74 °F
Bottom hole temperature: 203 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 100 ft

Cement top: Surface

**Directional Info - Build & Drop**
Kick-off point 2150 ft
Departure at shoe: 487 ft
Maximum dogleg: 2 °/100ft
Inclination at shoe: 0 °

| Run Seq | Segment Length (ft) | Size (in) | Nominal Weight (lbs/ft) | Grade | End Finish | True Vert Depth (ft) | Measured Depth (ft) | Drift Diameter (in) | Est. Cost ($) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 9273 | 4.5 | 11.60 | I-80 | LT&C | 9220 | 9273 | 3.875 | 122404 |

| Run Seq | Collapse Load (psi) | Collapse Strength (psi) | Collapse Design Factor | Burst Load (psi) | Burst Strength (psi) | Burst Design Factor | Tension Load (kips) | Tension Strength (kips) | Tension Design Factor |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5556 | 6360 | 1.145 | 5556 | 7780 | 1.40 | 107 | 212 | 1.98 J |

Prepared by: Helen Sadik-Macdonald
Div of Oil,Gas & Mining
Phone: 801 538-5357
FAX: 801-359-3940
Date: June 18,2009
Salt Lake City, Utah

Remarks:
Collapse is based on a vertical depth of 9220 ft, a mud weight of 11.6 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

*Engineering responsibility for use of this design will be that of the purchaser.*

# ON-SITE PREDRILL EVALUATION
## Utah Division of Oil, Gas and Mining

| | | | | | |
|---|---|---|---|---|---|
| **Operator** | KERR-MCGEE OIL & GAS ONSHORE, L.P. | | | | |
| **Well Name** | NBU 922-31F3S | | | | |
| **API Number** | 43047504190000 | **APD No** | 1533 | **Field/Unit** | NATURAL BUTTES |
| **Location: 1/4,1/4** | NESW **Sec** 31 **Tw** 9.0S **Rng** 22.0E | 2607 | FSL | 1443 | FWL |
| **GPS Coord (UTM)** | | **Surface Owner** | | | |

**Participants**

Floyd Bartlett (DOGM), Jim Davis (SITLA), Raleen White, Griz Oleen, Clay Einerson, Charles Chase and Tony Kzneck (Kerr McGee), Ben Williams (UDWR) and Kolby Kay (Timberline Engineering and Land Surveying).

**Regional/Local Setting & Topography**

The general area is the Natural Buttes Unit in the lower portion of the Sand Wash Drainage of Uintah, County, approximately 35 air miles and 51 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads to the site. Topography of the Sand Wash area is characterized by broad open flats dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs furnishing water for antelope or livestock.

The existing pad of the producing NBU 280 well will be extended on 3 sides to provide more width and length. Three additional directional wells will be drilled on the enlarged pad. They are the NBU 922-31F3S, NBU 922-31F2S and NBU 922-31J2S. The site is in the bottom of a canyon that runs to the north. It is surrounded on the east and west by hills with sandstone ledges. The defined drainage of the canyon is to the west beyond the location and contains tamarix vegetation. The surface of the existing location will be lowered 0.3 feet to obtain fill for enlarging the pad. The reserve pit will be cut into a slope on the northeast side of the location which has had significant previously excavation. A surface drainage ditch is needed on the east side of the pit extending north around the pit. The White River is approximately 3 miles down drainage.

Both the surface and minerals are owned by SITLA. Jim Davis represented SITLA at the pre-site investigation. Mr. Davis had no concerns pertaining to this location. The selected location appears to be a suitable site for drilling and operating additional wells.

**Surface Use Plan**

**Current Surface Use**
Grazing
Recreational
Wildlfe Habitat
Existing Well Pad

| New Road Miles | Well Pad | Src Const Material | Surface Formation |
|---|---|---|---|
| 0 | **Width** 305 **Length** 450 | Onsite | UNTA |

**Ancillary Facilities** N

**Waste Management Plan Adequate?**

**Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Vegetation is a poor desert shrub type, which includes sagebrush, greasewood, cheatgrass, Russian thistle, tammarix, halogeton and spring annuals.

Antelope, sheep during the winter, rabbits, coyotes, and small mammals, birds and raptors.

**Soil Type and Characteristics**

Deep sandy loam.

**Erosion Issues** N

**Sedimentation Issues** Y

A surface drainage ditch is needed on the east side of the pit extending north around the pit.

**Site Stability Issues** N

**Drainage Diverson Required?** Y

A surface drainage ditch is needed on the east side of the pit extending north around the pit.

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

A surface drainage ditch is needed on the east side of the pit extending north around the pit.

**Paleo Survey Run?** Y **Paleo Potental Observed?** N **Cultural Survey Run?** Y **Cultural Resources?**

**Reserve Pit**

| Site-Specific Factors | | Site Ranking | |
|---|---|---|---|
| **Distance to Groundwater (feet)** | >200 | 0 | |
| **Distance to Surface Water (feet)** | >1000 | 0 | |
| **Dist. Nearest Municipal Well (ft)** | >5280 | 0 | |
| **Distance to Other Wells (feet)** | 300 to 1320 | 10 | |
| **Native Soil Type** | Mod permeability | 10 | |
| **Fluid Type** | Fresh Water | 5 | |
| **Drill Cuttings** | Normal Rock | 0 | |
| **Annual Precipitation (inches)** | | 0 | |
| **Affected Populations** | | | |
| **Presence Nearby Utility Conduits** | Not Present | 0 | |
| | **Final Score** | 25 | 1 Sensitivity Level |

**Characteristics / Requirements**

The proposed reserve pit is 70' x 220' x 10' deep located in a cut on the northeast corner of the location. Kerr McGee plans a 30-mil liner with a double felt sub-liner.

**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 30 **Pit Underlayment Required?** Y

**Other Observations / Comments**

| Floyd Bartlett | 5/20/2009 |
|---|---|
| **Evaluator** | **Date / Time** |

# Application for Permit to Drill
# Statement of Basis



## Utah Division of Oil, Gas and Mining



| APD No | API WellNo | Status | Well Type | Surf Owner | CBM |
|---|---|---|---|---|---|
| 1533 | 43047504190000 | SITLA | GW | S | No |
| **Operator** | KERR-MCGEE OIL & GAS ONSHORE, L.P. | | **Surface Owner-APD** | | |
| **Well Name** | NBU 922-31F3S | | **Unit** | NATURAL BUTTES | |
| **Field** | NATURAL BUTTES | | **Type of Work** | DRILL | |
| **Location** | NESW 31 9S 22E S 2607 FSL 1443 FWL | | GPS Coord (UTM) | 629367E | 4427814N |

**Geologic Statement of Basis**

Kerr McGee proposes to set 2,140' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 2,900'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of section 31. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought to above the base of the moderately saline groundwater in order to isolate it from fresher waters uphole.

| Brad Hill | 6/3/2009 |
|---|---|
| **APD Evaluator** | **Date / Time** |

**Surface Statement of Basis**

The general area is the Natural Buttes Unit in the lower portion of the Sand Wash Drainage of Uintah, County, approximately 35 air miles and 51 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads to the site. Topography of the Sand Wash area is characterized by broad open flats dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs furnishing water for antelope or livestock.

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Both the surface and minerals are owned by SITLA. Jim Davis represented SITLA at the pre-site investigation. Mr. Davis had no concerns pertaining to this location. The selected location appears to be a suitable site for drilling and operating additional wells.

Ben Williams of the Utah Division of Wildlife Resources also attended the pre-site. Mr. Williams stated no wildlife values would be significantly affected by drilling and operating the wells at this location.

| Floyd Bartlett | 5/20/2009 |
|---|---|
| **Onsite Evaluator** | **Date / Time** |

**Conditions of Approval / Application for Permit to Drill**

# Application for Permit to Drill
# Statement of Basis



| Category | Condition |
|---|---|
| Pits | A synthetic liner with a minimum thickness of 30mils with a felt subliner shall be properly installed and maintained in the reserve pit. |
| Surface | Drainages adjacent to the proposed pad shall be diverted around the location. |
| Surface | The reserve pit shall be fenced upon completion of drilling operations. |

# WORKSHEET
# APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 5/11/2009 **API NO. ASSIGNED:** 43047504190000

**WELL NAME:** NBU 922-31F3S

**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995) **PHONE NUMBER:** 720 929-6156

**CONTACT:** Danielle Piernot

**PROPOSED LOCATION:** NESW 31 090S 220E **Permit Tech Review:** ☑

**SURFACE:** 2607 FSL 1443 FWL **Engineering Review:** ☑

**BOTTOM:** 2215 FNL 1258 FWL **Geology Review:** ☑

**COUNTY:** UINTAH

**LATITUDE:** 39.99250 **LONGITUDE:** -109.48468

**UTM SURF EASTINGS:** 629367.00 **NORTHINGS:** 4427814.00

**FIELD NAME:** NATURAL BUTTES

**LEASE TYPE:** 3 - State

**LEASE NUMBER:** ML23607 **PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE

**SURFACE OWNER:** 3 - State **COALBED METHANE:** NO

**RECEIVED AND/OR REVIEWED:**

- ☑ **PLAT**
- ☑ **Bond:** STATE/FEE - 22013542
- ☐ **Potash**
- ☑ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ☑ **Water Permit:** Permit #43-8496
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ☑ **Intent to Commingle**

**Commingling Approved**

**LOCATION AND SITING:**

- ☐ **R649-2-3.**

**Unit:** NATURAL BUTTES

- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ☑ **Drilling Unit**

**Board Cause No:** Cause 173-14

**Effective Date:** 12/2/1999

**Siting:** 460' fr u bdry & uncomm. tract

- ☑ **R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:**
3 - Commingling - ddoucet
5 - Statement of Basis - bhill
15 - Directional - dmason
17 - Oil Shale 190-5(b) - dmason
25 - Surface Casing - ddoucet

JON M. HUNTSMAN, JR.
Governor
GARY R. HERBERT
Lieutenant Governor

**State of Utah**
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

# Permit To Drill

**********

**Well Name:** NBU 922-31F3S
**API Well Number:** 43047504190000
**Lease Number:** ML23607
**Surface Owner:** STATE
**Approval Date:** 7/16/2009

**Issued to:**
KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

**Authority:**
Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14 . The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

**Duration:**
This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

**Commingle:**
In accordance with Board Cause No. 173-14 commingling the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

**General:**
Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

**Conditions of Approval:**
In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Surface casing shall be cemented to the surface.

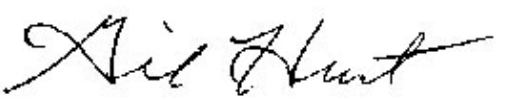
**Additional Approvals:**
The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:
- Any changes to the approved drilling plan – contact Dustin Doucet
- Significant plug back of the well – contact Dustin Doucet
- Plug and abandonment of the well – contact Dustin Doucet

**Notification Requirements:**
The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:
- Within 24 hours following the spudding of the well – contact Carol Daniels
  OR
  submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at http://oilgas.ogm.utah.gov
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing – contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program – contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well – contact Dan Jarvis

**Contact Information:**
The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):
- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office
  801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office
  801-942-0871 - after office hours

**Reporting Requirements:**
All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:
- Entity Action Form (Form 6) – due within 5 days of spudding the well
- Monthly Status Report (Form 9) – due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) – due prior to implementation
- Written Notice of Emergency Changes (Form 9) – due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) – due prior to implementation
- Report of Water Encountered (Form 7) – due within 30 days after completion
- Well Completion Report (Form 8) – due within 30 days after completion or plugging

**Approved By:**



Gil Hunt
Associate Director, Oil & Gas

API Well No: 43047504190000

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ML23607

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 922-31F3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047504190000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6007 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2607 FSL 1443 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESW Section: 31 Township: 09.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

**11.** CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ✓ SPUD REPORT Date of Spud: 10/8/2009 | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL LOCATION ON 10/08/2009 AT 09:00 HRS.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
October 12, 2009

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Andy Lytle | 720 929-6100 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 10/8/2009 |

RECEIVED October 08, 2009

API Well No: 43047504190000

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ML23607

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

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**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 922-31F3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047504190000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6007 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2607 FSL 1443 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESW Section: 31 Township: 09.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

**11.** CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 10/19/2009 | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

MIRU PROPETRO AIR RIG ON 10/15/2009. DRILLED 12-1/4" SURFACE HOLE TO 2140'. RAN 9-5/8" 36# J-55 SURFACE CSG. PUMP 20 BBLS OF GEL WATER. LEAD CMT W/220 SX CLASS G HI FILL @ 11.0 PPG, 3.82 YIELD (CIRC THROUGHOUT). TAILED CMT W/200 SX CLASS G PREM LITE @ 15.8 PPG, 1.15 YIELD. DROP PLUG ON FLY, DISPLACE W/159.6 BBLS OF H2O. LIFT PRESSURE 230, BUMP PLUG 900 PSI. CHECK FLOAT, FLOAT HELD, 20 BBLS OF LEAD CMT TO PIT. WATER FELL. PUMP TAIL CMT W/150 SX CLASS G PREM LITE @ 15.8 PPG, 1.15 YIELD DOWN 1". WAIT 2 HRS. TOP OUT W/100 SX CLASS G PREM LITE @ 15.8 PPG, 1.15 YIELD. CMT FELL AND STAYED 6'. WORT.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
October 20, 2009

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Andy Lytle | 720 929-6100 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 10/20/2009 |

RECEIVED October 20, 2009

API Well No: 43047504190000

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ML23607

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 922-31F3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047504190000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6007 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2607 FSL 1443 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESW Section: 31 Township: 09.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

**11.** CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 11/23/2009 | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

FINISHED DRILLING FROM 2140' TO 9345' ON 11/21/2009. RAN 4-1/2" 11.6# I-80 PRODUCTION CSG. PUMP 40 BBLS FRESH WATER. LEAD CMT W/750 SX CLASS G PREM LITE @ 12.8 PPG, 1.78 YIELD. TAILED CMT W/1350 SX CLASS G 50/50 POZ MIX @ 14.3 PPG, 1.26 YIELD. DROPPED PLUG AND DISPLACED W/144 BBLS FRESH WATER W/0.1 GAL/BBL ALDACIDE G @ 2650 PSI. BUMPED PLUG @ 3120 PSI, FLOATS HELD W/1.5 BBLS RETURN. PARTIAL RETURNS DURING CMT JOB. LOST RETURNS 93 BBLS INTO DISPLACEMENT, NO CMT TO SURFACE. RELEASE ENSIGN 146 RIG ON 11/23/2009 AT 21:00 HRS.

**Accepted by the Utah Division of Oil, Gas and Mining**

**FOR RECORD ONLY**

November 24, 2009

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Andy Lytle | 720 929-6100 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 11/24/2009 |

RECEIVED November 24, 2009

API Well No: 43047504190000

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ML23607

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 922-31F3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047504190000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6007 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2607 FSL 1443 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESW Section: 31 Township: 09.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

**11.** CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 8/27/2010 | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ✓ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

THE SUBJECT WELL WAS PLACED ON PRODUCTION ON AUGUST 27, 2010 AT 10:40 A.M. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
August 30, 2010

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Gina Becker | 720 929-6086 | Regulatory Analyst II |
| **SIGNATURE** N/A | | **DATE** 8/27/2010 |

**RECEIVED** August 27, 2010

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

AMENDED REPORT ☐ (highlight changes) FORM 8

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER: ML23607
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT or CA AGREEMENT NAME: UTU63047A
8. WELL NAME and NUMBER: NBU 922-31F3S
9. API NUMBER: 4304750419
10 FIELD AND POOL, OR WILDCAT: NATURAL BUTTES

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ DRY ☐ OTHER
b. TYPE OF WORK: NEW WELL ☑ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER

2. NAME OF OPERATOR: KERR MCGEE OIL & GAS ONSHORE, L.P.

3. ADDRESS OF OPERATOR: P.O.BOX 173779 CITY DENVER STATE CO ZIP 80217
PHONE NUMBER: (720) 929-6100

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: NESW 2607 FSL 1443 FWL S31,T9S,R22E
BHL Reviewed by HSM
AT TOP PRODUCING INTERVAL REPORTED BELOW: SENW 2186 FNL 1253 FWL S31,T9S,R22E
AT TOTAL DEPTH: SENW 2209 FNL 1265 FWL S31, T9S,R22E

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NESW 31 9S 22E S
12. COUNTY: UINTAH
13. STATE: UTAH

14. DATE SPUDDED: 10/8/2009
15. DATE T.D. REACHED: 11/21/2009
16. DATE COMPLETED: 8/27/2010 ABANDONED ☐ READY TO PRODUCE ☑
17. ELEVATIONS (DF, RKB, RT, GL): 4840 GL

18. TOTAL DEPTH: MD 9,345 TVD 9,287
19. PLUG BACK T.D.: MD 9,283 TVD 9,225
20. IF MULTIPLE COMPLETIONS, HOW MANY? *
21. DEPTH BRIDGE PLUG SET: MD TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
GR/CBL-HDIL/ZDL/CNGR

23.
WAS WELL CORED? NO ☑ YES ☐ (Submit analysis)
WAS DST RUN? NO ☑ YES ☐ (Submit report)
DIRECTIONAL SURVEY? NO ☐ YES ☑ (Submit copy)

**24. CASING AND LINER RECORD (Report all strings set in well)**

| HOLE SIZE | SIZE/GRADE | WEIGHT (#/ft.) | TOP (MD) | BOTTOM (MD) | STAGE CEMENTER DEPTH | CEMENT TYPE & NO. OF SACKS | SLURRY VOLUME (BBL) | CEMENT TOP ** | AMOUNT PULLED |
|---|---|---|---|---|---|---|---|---|---|
| 20" | 14" STL | 36.7# | | 40 | | 28 | | | |
| 12 1/4" | 9 5/8" J-55 | 36# | | 2,126 | | 670 | | | |
| 7 7/8" | 4 1/2" I-80 | 11.6# | | 9,327 | | 2,100 | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**25. TUBING RECORD**

| SIZE | DEPTH SET (MD) | PACKER SET (MD) | SIZE | DEPTH SET (MD) | PACKER SET (MD) | SIZE | DEPTH SET (MD) | PACKER SET (MD) |
|---|---|---|---|---|---|---|---|---|
| 2 3/8" | 8,859 | | | | | | | |

**26. PRODUCING INTERVALS**

| FORMATION NAME | TOP (MD) | BOTTOM (MD) | TOP (TVD) | BOTTOM (TVD) |
|---|---|---|---|---|
| (A) WASATCH | 7,115 | 7,119 | | |
| (B) MESAVERDE | 7,200 | 9,242 | | |
| (C) | | | | |
| (D) | | | | |

**27. PERFORATION RECORD**

| INTERVAL (Top/Bot - MD) | | SIZE | NO. HOLES | PERFORATION STATUS |
|---|---|---|---|---|
| 7,115 | 7,119 | 0.36 | 16 | Open ☑ Squeezed ☐ |
| 7,200 | 9,242 | 0.36 | 344 | Open ☑ Squeezed ☐ |
| | | | | Open ☐ Squeezed ☐ |
| | | | | Open ☐ Squeezed ☐ |

**28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.**

| DEPTH INTERVAL | AMOUNT AND TYPE OF MATERIAL |
|---|---|
| 7115 - 9242 | PUMP 9,373 BBLS SLICK H2O & 365,863 LBS 30/50 SAND |
| | |
| | |

**29. ENCLOSED ATTACHMENTS:**

☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☑ DIRECTIONAL SURVEY
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER:

RECEIVED
OCT 11 2010
DIV. OF OIL, GAS & MINING

**30. WELL STATUS:** PROD

(5/2000) (CONTINUED ON BACK)

**31. INITIAL PRODUCTION** — **INTERVAL A (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| 8/27/2010 | 9/1/2010 | 24 | | 2 | 2,690 | 549 | FLOWING |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| 20/64 | 2,142 | 2,840 | | | | | 2 | 2,690 | 549 | PROD |

**INTERVAL B (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

**INTERVAL C (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

**INTERVAL D (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

**32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)**

**33. SUMMARY OF POROUS ZONES (Include Aquifers):**

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

**34. FORMATION (Log) MARKERS:**

| Formation | Top (MD) | Bottom (MD) | Descriptions, Contents, etc. | Name | Top (Measured Depth) |
|---|---|---|---|---|---|
| GREEN RIVER | 1,199 | | | | |
| BIRD'S NEST | 1,450 | | | | |
| MAHOGANY | 1,934 | | | | |
| WASATCH | 4,453 | 7,142 | | | |
| MESAVERDE | 7,142 | 9,345 | TD | | |

**35. ADDITIONAL REMARKS (Include plugging procedure)**

Attached is the chronological well history and final survey. Completion chrono details individual frac stages.

**36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.**

NAME (PLEASE PRINT) ANDREW LYTLE TITLE REGULATORY ANALYST

SIGNATURE DATE 9/30/2010

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

(5/2000)

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | Rig Name No: ENSIGN 146/146, PROPETRO/ |
| Event: DRILLING | Start Date: 9/28/2009 | End Date: 11/23/2009 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 10/15/2009 | 13:00 - 16:00 | 3.00 | MIRU | 01 | A | P | | DRESS CONDUCTOR, INSTALL AIR BOWL AND BOWIE LINE, INSTALL AIR COMPRESSOR AND AIR BOOSTER, RIG UP PUMPS, BUILD DITCH.P/U AIR HAMMER. |
| | 16:00 - 18:00 | 2.00 | DRLSUR | 02 | A | P | | AIR SPUD 10/15/2009 16:00 AIR HAMMER 44'-180' |
| | 18:00 - 21:00 | 3.00 | DRLSUR | 06 | A | P | | TOH L/D HAMMER, P/U HUNTING 1.83 DEGREE BENT HOUSE MOTOR, M/U HC507Z BIT 2ND RUN P/U DIRECTIONAL TOOLS, SCRIBE DIRECTIONAL TOOLS. |
| | 21:00 - 21:30 | 0.50 | DRLSUR | 22 | O | X | | CROSS COMMUNICATION OCCURRED W/ NBU 922-31F2S AFTER KICKING PUMPS ON. |
| | 21:30 - 23:30 | 2.00 | DRLSUR | 06 | A | X | | LDDS TO MOVE AHEAD TO THE NBU 922-31J2S NEXT WELL ON PAD 60' AHEAD. |
| | 23:30 - 0:00 | 0.50 | DRLSUR | 01 | E | X | | RIG DOWN. MOVE AHEAD TO NBU 922-31J2S |
| 10/17/2009 | 19:30 - 21:30 | 2.00 | MIRU | 01 | A | P | | RIG BACK UP OVER HOLE. INSTALL AIR BOWL AND BOWIE LINE. INSTALL AIR COMPRESSOR AND AIR BOOSTER. RIG UP PUMPS, BUILD DITCH. P/U AIR HAMMER. |
| | 21:30 - 0:00 | 2.50 | DRLSUR | 06 | A | P | | TRIP IN AIR HAMMER 120', KNOCK OUT CEMENT STREAMERS, LD AIR HAMMER. P/U HUNTING 1.83 DEGREE BENT HOUSE MOTOR, M/U HC507Z BIT 2ND RUN P/U DIRECTIONAL TOOLS, SCRIBE DIRECTIONAL TOOLS. |
| 10/18/2009 | 0:00 - 21:00 | 21.00 | DRLSUR | 02 | D | P | | DRILL SLIDE 180'- 2140' (1960', 93'/HR) TD 10/18/2009 21:00. WOB 15K-22K, ROT 45, GPM 650, DH RPM 104, ON/OFF PSI 1750/1450, UP/DOWN/ROT 68/62/65 3K DRAG. FULL CIRC. NO MAGNETIC INTERFERENCE WHILE DRILLING HOLE. |
| | 21:00 - 22:00 | 1.00 | CSG | 05 | F | P | | CIRC AND CONDITION HOLE, SWEEP HOLE W/ POLY SWEEPS. FULL CIRC. |
| | 22:00 - 0:00 | 2.00 | CSG | 06 | D | P | | LDDS, LD DIRECTIONAL TOOLS. |
| 10/19/2009 | 0:00 - 1:30 | 1.50 | CSG | 06 | D | P | | LD DRILL STRING, BREAK ALL HANDLELING SUBS, BREAK DOWN ALL DIRECTIONAL TOOLS. LD DIRECTONAL TOOLS, RELEASE WEATHERFORD DIRECTIONAL SERVICES. |
| | 1:30 - 4:00 | 2.50 | CSG | 12 | C | P | | RUN 48 JTS OF 9-5/8", 36#, J-55, LTC THREAD CSG AND LAND 2116' KB , RUN BAFFLE PLATE TOP OF FIRST JT 2069' KB. FILL PIPE 500' AND 1500'. ANNULLAR FLOW OF 20 BBLS HR TOWARD END OF CSG RUN. RUN 200' OF 1" PIPE. |
| | 4:00 - 5:00 | 1.00 | MIRU | 01 | E | P | | RIG DOWN RIG AND READY TO MOVE TO NBU 1022-3DT. RELEASE RIG 10/19/2009 05:00 |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 | |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | | Rig Name No: ENSIGN 146/146, PROPETRO/ |
| Event: DRILLING | Start Date: 9/28/2009 | | End Date: 11/23/2009 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 5:00 - 9:30 | 4.50 | CSG | 12 | E | P | | HOLD SAFETY MEEITNG, RIG UP CEMENTERS, INSPECT TRUCK FOR VISABLE PROBLEMS. HOLD SAFETY MEETING W PROPETRO CEMENTERS, START FLUSH 140 BBLS OF H20, PUMP 20 BBLS OF GEL WATER, PUMP 220 SX (149.6 BBLS) OF 11# 3.82 YD 23 GAL/SK HI FILL LEAD CEMENT. CIRC THROUGH OUT. PUMP 200 SX (41 BBLS) OF 15.8#, 1.15 YD, 5 GAL/SK PREMIUM TAIL 2% CALC. DROP PLUG ON FLY, DISPLACE W/ 159.6 BBLS OF H20, LIFT PRESSURE 230, BUMP PLUG 900 PSI, CHECK FLOAT. FLOAT HELD. 20 BBLS OF LEAD CEMENT TO PIT. WATER FELL. PUMP TAIL CEMENT (150 SX) 30.7 BBLS DOWN 1" DISPLACE LEAD CEMENT W/ 15.8# 4% CALC2 TAIL CEMENT. WAIT 2 HRS, TOP OUT W/ 100 SX (20.1 BBLS) OF TAIL 15.8# CEMENT. CEMENT FELL AND STAYED 6'. |
| 11/15/2009 | 0:00 - 2:00 | 2.00 | DRLPRO | 24 | A | P | | LOWER 9 5/8" WELLHEAD 5" - REWELD |
| | 2:00 - 3:00 | 1.00 | MIRU | 01 | C | P | | RDRT - SKID RIG TO NBU 922-31F3S |
| | 3:00 - 4:00 | 1.00 | DRLPRO | 14 | A | P | | N/UP BOPE |
| | 4:00 - 9:00 | 5.00 | DRLPRO | 15 | A | P | | TEST BOPE - RAMS, CHOKE, CHOKE LINE, HCR, MANUAL VALVES, FLOOR VALVES & IBOP 250 LOW 5000 HIGH, ANNULAR 250 LOW 2500 HIGH, 1500 CASING |
| | 9:00 - 9:30 | 0.50 | DRLPRO | 14 | B | P | | INSTALL WEARBUSHING |
| | 9:30 - 13:00 | 3.50 | DRLPRO | 06 | A | P | | P/UP MM & BIT, LOAD MWD & ORIENT SAME - RIH TAG CMT @ 2017' |
| | 13:00 - 13:30 | 0.50 | DRLPRO | 07 | B | P | | CENTER & LEVEL DERRICK - INSTALL ROTATING HEAD ASSY - 3" CLEARANCE ON ROTATING HEAD TO ROTARY BUSHINGS |
| | 13:30 - 14:00 | 0.50 | DRLPRO | 07 | A | P | | SERVICE TOPDRIVE - C/OUT SAVER SUB |
| | 14:00 - 15:30 | 1.50 | DRLPRO | 02 | F | P | | DRILL CEMENT FE & RATHOLE F/2017' TO 2150' |
| | 15:30 - 0:00 | 8.50 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/2150' TO 3043' (893' @ 105fph) MW 8.4,VIS 27, WOB 18, RPM 45, MM RPM 102, TQ 6, GPM 486, SLIDE 2237 2252, 2282 2297, 2327 2342, 2373 2391, 2418 2438, 2463 2481, 2509 2529, 2554 2574, 2599 2614, 2644 2657, 2690 2705, 2735 2751, 2780 2795, 2826 2834, 2871 2879, 2916 2924, 2962 2970, 3007 3013, WOB 18, MM RPM 102, GPM 486, DIFF 250 |
| 11/16/2009 | 0:00 - 14:00 | 14.00 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/3043' TO 4729' (1686' @ 120.4fph) MW 8.4, WOB 18, RPM 45, MM RPM 102, TQ 7, GPM 486, SLIDE 3053 3059, 3143 3150, 3189 3194, 3234 3240, 3324 3330, 3415 3420, 3551 3557, 3641 3658, 3732 3744, 3823 3838, 3913 3928, 4004 4019, |
| | 14:00 - 14:30 | 0.50 | DRLPRO | 07 | A | P | | RIG SER |
| | 14:30 - 20:00 | 5.50 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/4729' TO 5414' ( 685' @ 124.5fph) MW 8.5, WOB 18, RPM 45, MM RPM 102, TQ 7, GPM 486, SLIDE 4819 4831, (SHUT IN MUD TANKS @ 4750' START SLOW MUD UP) |
| | 20:00 - 21:00 | 1.00 | DRLPRO | 05 | A | P | | LOST RETURNS @ 5414' - CIRC @ REDUCED RATE - REGAIN RETURNS - BYPASSED SHAKERS ADD LCM - LOST 130 BBLS |
| | 21:00 - 22:00 | 1.00 | DRLPRO | 05 | A | P | | CLEANED LCM F/PUMP SUCTION LINE FILTER SCREENS ON BOTH PUMPS |
| | 22:00 - 0:00 | 2.00 | DRLPRO | 02 | D | P | | DRLG/SLIDE F/5414' TO 5706' (292' @ 146fph) MW 8.6, VIS 38, LCM 5%, WOB 18, RPM 45, MM RPM 102, TQ 9, GPM 486 |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | Rig Name No: ENSIGN 146/146, PROPETRO/ |
| Event: DRILLING | Start Date: 9/28/2009 | End Date: 11/23/2009 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 11/17/2009 | 0:00 - 17:30 | 17.50 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/5706' TO 6723' (1017' @ 58.1fph) MW 9.7, VIS 38, LCM 7%, RPM 45, MM RPM 102, TQ 10, GPM 486, SLIDE 5907 5919, 6270 6290, 6542 6552, WOB 20, MM RPM 102, GPM 486, DIFF 225 |
| | 17:30 - 18:00 | 0.50 | DRLPRO | 07 | A | P | | RIG SER |
| | 18:00 - 0:00 | 6.00 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/6723' TO 7110' (387' @ 64.5fph) MW 10.0, VIS 39, LCM 10%, WOB 18, RPM 45, MM RPM 102, TQ 10, GPM 486 |
| 11/18/2009 | 0:00 - 16:00 | 16.00 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/7110' TO 7903' (793' @ 49.6fph) MW 10.2, VIS 40, LCM 15%, WOB 18, RPM 45, MM RPM 102, TQ 10, GPM 486, SLIDE 7268 7278, 7358 7366, 7812 7824, WOB 25, MM RPM 102, GPM 486, DIFF 250 |
| | 16:00 - 16:30 | 0.50 | DRLPRO | 07 | A | P | | RIG SER |
| | 16:30 - 0:00 | 7.50 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/7903' TO 8350' (447' @ 59.6fph) MW 11.0, VIS 40, LCM 15%, WOB 19, RPM 45, MM RPM 102, TQ 10, GPM 486 |
| 11/19/2009 | 0:00 - 6:00 | 6.00 | DRLPRO | 02 | D | P | | DRILL/SLIDE F/8350' TO 8560' (210' @ 35fph) MW 11.9, VIS 40, LCM 15%, WOB 19, RPM 45, MM RPM 102, TQ 10, GPM 486 |
| | 6:00 - 11:00 | 5.00 | DRLPRO | 08 | B | Z | | BLACKOUT ON RIG - UNABLE TO MOVE BLOCKS UP OR DOWN, BRAKES WOULD NOT RELEASE - COMPUTER LOST ALL BLOCK CALIBRATIONS - NO BATTERY BACKUP F/RIG COMPUTERS |
| | 11:00 - 11:30 | 0.50 | DRLPRO | 07 | A | P | | RIG SER, SERVICED TOP DRIVE |
| | 11:30 - 17:00 | 5.50 | DRLPRO | 02 | D | P | | DRILG F/8560' TO 8740' (180' @ 32.7fph) MW 11.9, VIS 40, LCM 15%, WOB 19, RPM 45, MM RPM 102, TQ 10, GPM 486 |
| | 17:00 - 20:00 | 3.00 | DRLPRO | 22 | C | P | | SHUT IN WELL @ 8740' MD 8682' TVD, GAS 5337 UNITS MUD BLOWING OUT OF SHAKER POSSUM BELLY- 12 BBL GAIN, VERIFY LINE UP OF CHOKE BOP SYSTEM WHILE MONITORING CSG/DRILL PIPE PSI BOTH 0 PSI, OPEN CHOKE 100% CIRC @ 4 BBL MIN F/15 MINS - NO VISUAL OR PRESSURE SIGNS OF GAS INFLUX - OPEN ANNULAR MINIMAL FLOW - CONTINUE DRLG F/8740' TO 8746' - OBSERVED EXCESS FLOW - SHUT DOWN PUMPS WELL FLOWING - SHUT IN WELL - CASING PSI 230 - 0 DRILL PIPE, OPEN CHOKE PUMPING @ 4 BBL/MIN TILL OBSERVED DP PSI APPROX 100 PSI, WEIGHT UP MUD TO 12.1 PPG CIRC @ (40 SPM) 495 PSI DP TILL WEIGHTED MUD REACHED BIT - CIRC BTTMS UP @ 400 CSG PSI - STOP PUMP OPEN ANNULAR - WELL NOT FLOWING - CONTINUE DRILLING RAISE MW TO 12.2 |
| | 20:00 - 0:00 | 4.00 | DRLPRO | 02 | D | P | | DRLG F/8746' TO 8855' (109' @ 27.25fph) MW 12.2, VIS 41, LCM 15%, WOB 20, RPM 45, MM RPM 102, TQ 10, GPM 486 |
| 11/20/2009 | 0:00 - 4:30 | 4.50 | DRLPRO | 02 | D | P | | DRLG F/8855' TO 8928' (73' @ 16.2fph) MW 12.2, VIS 40, LCM 15%, WOB 26, RPM 45, MM RPM 102, TQ 10, GPM 486 |
| | 4:30 - 16:30 | 12.00 | DRLPRO | 06 | A | P | | TFNB/MM - BACK REAM F/8928' TO 7128' - PUMP SLUG POOH - RACK BACK DIRECTIONAL BHA - L/DN MM - P/UP .16 RPG MM - RIH TO 2100' |
| | 16:30 - 17:00 | 0.50 | DRLPRO | 05 | A | P | | CIRC OUT GAS @ 2100' - 6818 UNITS - 20' FLARE |
| | 17:00 - 18:30 | 1.50 | DRLPRO | 06 | A | P | | RIH F/2100' TO 4452' |
| | 18:30 - 19:30 | 1.00 | DRLPRO | 03 | E | P | | WASH TIGHT AREA @ 4452' - CIRC GAS OUT - 5558 UNITS - 20' FLARE |
| | 19:30 - 21:00 | 1.50 | DRLPRO | 06 | A | P | | RIH F/4452' TO 5970' |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | Rig Name No: ENSIGN 146/146, PROPETRO/ |
| Event: DRILLING | Start Date: 9/28/2009 | End Date: 11/23/2009 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 21:00 - 21:00 | 0.00 | DRLPRO | 05 | A | P | | CIRC GAS OUT - 4026 UNITS - 25' FLARE |
| | 21:00 - 23:30 | 2.50 | DRLPRO | 06 | A | P | | RIH F/5970' TO 8700' |
| | 23:30 - 0:00 | 0.50 | DRLPRO | 03 | E | P | | WASH F/8700' TO 8790' - GAS ON BTTMS UP 5563 - 25' FLARE - GAS CUT TO 11.9 |
| 11/21/2009 | 0:00 - 1:00 | 1.00 | DRLPRO | 03 | E | P | | WASH F/8790' TO 8928' |
| | 1:00 - 10:00 | 9.00 | DRLPRO | 02 | D | P | | DRLG F/8928' TO 9321' (393' @ 43.7fph) MW 12.8, VIS 43, 15% LCM, WOB 18, RPM 45, MM RPM 78, TQ 10, GPM 486 |
| | 10:00 - 12:30 | 2.50 | DRLPRO | 22 | G | P | | LOST ALL RETURNS @ 9321' - REDUCE PUMP RATE & WORK PIPE REGAINED 5% RETURNS - CONTINUE PUMP RATE WORKING PIPE RAISING LCM % TO 30% - RECEIVED 260 BBLS 12.4 PPG MUD F/H&P 298 - LOST 200 BBLS |
| | 12:30 - 14:00 | 1.50 | DRLPRO | 02 | D | P | | DRLG F/9321' TO 9345' (24' @ 16fph) MW 12.6, VIS 43, LCM 30%, WOB 18, RPM 45, MM RPM 78, TQ 10, GPM 441 - TD WELL @ 9345' MD - 9287' TVD |
| | 14:00 - 14:30 | 0.50 | DRLPRO | 07 | A | P | | RIG SER |
| | 14:30 - 16:00 | 1.50 | DRLPRO | 05 | C | P | | CIRC |
| | 16:00 - 18:00 | 2.00 | DRLPRO | 06 | E | P | | W/TRIP 15 STDS - 9345' TO 7995' - BACKED REAM 5 STDS - PULLED 10 STDS - RIH 2 STDS 7995' TO 8175' |
| | 18:00 - 18:30 | 0.50 | DRLPRO | 08 | B | P | | DRILL PIPE HYD ELEVATORS WOULD NOT CLOSE |
| | 18:30 - 19:30 | 1.00 | DRLPRO | 06 | E | P | | RIH F/8175' TO 9345' - BTTMS UP GAS 2832 UNITS 10' FLARE |
| | 19:30 - 20:30 | 1.00 | DRLPRO | 05 | C | P | | CIRC - RAISE MW TO 12.8 |
| | 20:30 - 23:00 | 2.50 | DRLPRO | 08 | A | P | | MUD MIXING HOPPER WASHED HOLE IN UNIT - CHANGE OUT MIXING HOPPER - CONTINUE CIRC |
| | 23:00 - 0:00 | 1.00 | DRLPRO | 05 | A | P | | CONITNUE CIRC RAISE MW TO 12.8 |
| 11/22/2009 | 0:00 - 0:30 | 0.50 | DRLPRO | 05 | A | P | | CIRC - RAISE MW TO 12.8 LCM 30% |
| | 0:30 - 3:00 | 2.50 | DRLPRO | 06 | B | P | | CHECK FLOW - POOH F/LOGS - BACK REAM 1st 10 STDS - PUMP SLUG - POOH TO 7017' |
| | 3:00 - 4:00 | 1.00 | DRLPRO | 06 | B | P | | DRILL PIPE SLIPS STUCK IN BUSHINGS - PULLING WET PIPE |
| | 4:00 - 6:00 | 2.00 | DRLPRO | 06 | B | P | | POOH F/LOGS F/7017' TO 5500' |
| | 6:00 - 7:00 | 1.00 | DRLPRO | 08 | A | P | | RIG BLACKED OUT - LOST ALL CALIBRATION DATA ON RIG COMPUTER - CALIBRATE BLOCKS - NO BATTERY BACKUP FOR RIG COMPUTERS |
| | 7:00 - 12:30 | 5.50 | DRLPRO | 06 | B | P | | POOH L/DN MM |
| | 12:30 - 13:00 | 0.50 | DRLPRO | 14 | B | P | | RETRIEVE WEARBUSHING |
| | 13:00 - 15:30 | 2.50 | DRLPRO | 11 | D | Z | | HPJSM, R/UP WEATHERFORD LOGGING TOOLS, COMPUTER FAILURE, R/DN WEATHERFORD TOOLS |
| | 15:30 - 18:00 | 2.50 | DRLPRO | 21 | E | Z | | WAIT ON BAKER ATLAS LOGGING UNIT |
| | 18:00 - 0:00 | 6.00 | DRLPRO | 11 | D | P | | HPJSM - R/UP BAKER ATLAS - RIH W/TRIPLE COMBO TO LOGGERS TD @ 9342' |
| 11/23/2009 | 0:00 - 11:00 | 11.00 | CSG | 12 | C | P | | HPJSM - R/UP FRANKS - RUN 221 JTS 1 MARKER 4.5" 11.60 I-80 BTC PROD CASING TO 9327' FLAOT SHOE @ 9327' FLOAT COLLAR @ 9282' |
| | 11:00 - 12:30 | 1.50 | CSG | 05 | A | P | | CIRC - PARTIAL RETURNS - LOST 150 BBLS MUD |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | Rig Name No: ENSIGN 146/146, PROPETRO/ |
| Event: DRILLING | Start Date: 9/28/2009 | End Date: 11/23/2009 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 12:30 - 15:30 | 3.00 | CSG | 12 | E | P | | HPJSM - R/UP HALLIBURTON - TEST LINES 5000 PSI, CEMENT 4.5" PROD CASING - PUMPED 40 BBLS FRESH WATER, 725 SKS LEAD 12.8 PPG 1.78 YIELD, 1350 SKS TAIL 14.3 PPG 1.26 YIELD, DROPPED PLUG & DISPLACED W/144 BBLS FRESH WATER W/0.1 gal/bbl CLAYFIX II & 0.1 gal/bbl ALDACIDE G @ 2650 PSI, BUMPED PLUG @ 3120 PSI, FLOATS HELD W/1.5 BBL RETURN, PARTIAL RETURNS DURING CMT JOB, LOST RETURNS 93 BBLS INTO DISPLACEMENT - NO CMT TO SURFACE |
| | 15:30 - 17:30 | 2.00 | CSG | 12 | C | P | | L/OUT LANDING JT & ATTEMPT TO SET WEATHERFORD PACKOFF ASSY F/DRILL FLOOR ATTEMPT FAILED - RAISE BOP SET PACK OFF ASSY - (LATCH RING ON HANGER MIS-ALIGNED) |
| | 17:30 - 21:00 | 3.50 | CSG | 14 | A | P | | CONT N/DN BOPE - CLEAN RIG TANKS & TRANSFER 800 BBLS MUD TO SECONDARY TANKS - RELEASE RIG @ 21:00 HRS 11/23/09 |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 | |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | | Rig Name No: LEED 733/733 |
| Event: COMPLETION | Start Date: 8/6/2010 | | End Date: 8/26/2010 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 8/6/2010 | 8:00 - 10:00 | 2.00 | COMP | 33 | D | P | | OPEN WELL 0#. NDWH, NU FRAC VALVES. HOOK UP B&C QUICK TEST. PSI TEST CSG & BOTH FRAC VALVES T/ 7000#. GOOD TEST. BLEED OFF PSI. SWI. RDMO B&C QUICK TEST. |
| 8/11/2010 | 15:00 - 18:00 | 3.00 | COMP | 36 | B | P | | OPEN WELL 0#.<br>PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF F/<br>9176'-78', 4 SPF, 8 HOLES.<br>9196'-98', 4 SPF, 8 HOLES.<br>9208'-10', 4 SPF, 8 HOLES.<br>9238'-42', 4 SPF, 16 HOLES. 40 HOLES.<br>BRK 1ST INTERVAL @ 3841 PSI @ 4.2 BPM. ISIP 3340 PSI, FG .80.<br>POOH, X-OVER FOR FRAC CREW.<br><br>FRAC STG 1)WHP 1980 PSI, BRK 3360 PSI @ 4.8 BPM. ISIP 2910 PSI, FG .76.<br>PUMP 100 BBLS @ 49.6 BPM @ 5247 PSI = 60% HOLES OPEN.<br>ISIP 3328 PSI, FG .80, NPI 410 PSI.<br>MP 6421 PSI, MR 50.1 BPM, AP 5247 PSI, AR 49.7 BPM,<br>PMP 1183 BBLS SW & 36,311 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 41,311 LBS,SWI, X-OVER FOR WL.<br>SDFN. |

# Operation Summary Report

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|---|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 | |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | | Rig Name No: LEED 733/733 |
| Event: COMPLETION | Start Date: 8/6/2010 | | End Date: 8/26/2010 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 8/12/2010 | 7:15 - 18:00 | 10.75 | COMP | 36 | B | P | | PERF STG 2)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 9011' P/U PERF F/ 8874'-76', 4 SPF, 8 HOLES. 8956'-59', 4 SPF, 12 HOLES. 8976'-81', 4 SPF, 20 HOLES. BRK 1ST INTERVAL @ 2852 PSI, 3.4 BPM. ISIP 2230 PSI, FG .69. POOH, X-OVER FOR FRAC CREW.<br><br>FRAC STG 2)WHP 1766 PSI, BRK 2513 PSI @ 5.2 BPM. ISIP 2260 PSI, FG .69. PUMP 100 BBLS @ 48.6 BPM @ 4567 PSI = 60% HOLES OPEN. ISIP 2744 PSI, FG .75, NPI 484 PSI. MP 5257 PSI, MR 50.6 BPM, AP 4628 PSI, AR 50 BPM, PMP 811 BBLS SW & 24,603 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 29,603 LBS, SWI, X-OVER FOR WL.<br><br>PERF STG 3)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 8820' P/U PERF F/ 8710'-14', 4 SPF, 16 HOLES. 8788'-90', 4 SPF, 8 HOLES. 40 HOLES. MADE 5 ATTM T/ BRK DOWN 1ST INTERVAL. COULD NOT GET IT T/ BRK. CONT PERFING. AFTER SHOOTING 2ND GUN, WL BECAME STUCK IN GREASE HEAD. TRYED T/ BLEED OFF WELL. WOULD NOT BLEED OFF. CALL FOR WL CLAMP. CLOSE WL BOP. PU ON LUBE. WL BECAME FREE. RIH FINISH PERF F/ 8620'-24', 4 SPF, 16 HOLES. POOH. X-OVER FOR FRAC CREW.<br><br>FRAC STG 3)WHP 2625 PSI, BRK 3610 PSI @ 5.2 BPM. ISIP 3385 PSI, FG .83 PUMP 100 BBLS @ 50 BPM @ 5360 PSI = 70% HOLES OPEN. PMP 1464 BBLS SW & 63,282 LBS OF 30/50 SND. SCREEN OUT ON THIS STG. DID NOT GET ANY EXPEDITE SAND IN FORMATION. OPEN WELL T/ PIT. FLOW BACK FOR 15 MIN & REFLUSH. SWI. X-OVER FOR WL.<br><br>PERF STG 4) PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 8510' P/U PERF F/ 8337'-38', 4 SPF, 4 HOLES. 8378'-80', 4 SPF, 8 HOLES. 8396'-98', 4 SPF, 8 HOLES. 8440'-42', 4 SPF, 8 HOLES. P/U 200' W/ WL. BRK 1ST INTERVAL W/ 3840 PSI @ 2.1 BPM, ISIP 2630 PSI, FG .75. CONT PERF THE REST OF THE STG. 8477'-80', 4 SPF, 12 HOLES. 40 HOLES. POOH, X-OVER FOR FRAC CREW.<br><br>FRAC STG 4)WHP 1786 PSI, BRK 3196 PSI @ 5.0 BPM. ISIP 2409 PSI, FG .73. PUMP 100 BBLS @ 50.3 BPM @ 4450 PSI = 68% HOLES OPEN. ISIP 2658 PSI, FG .77, NPI 349 PSI. MP 4579 PSI, MR 51.1 BPM, AP 4330 PSI, AR 50 |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 | |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | | Rig Name No: LEED 733/733 |
| Event: COMPLETION | Start Date: 8/6/2010 | | End Date: 8/26/2010 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | BPM,<br>PMP 1261 BBLS SW & 44,466 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 49,466 LBS, SWIFN. |
| 8/13/2010 | 6:45 - 7:00 | 0.25 | COMP | 48 | | P | | HSM. |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | Rig Name No: LEED 733/733 |
| Event: COMPLETION | Start Date: 8/6/2010 | End Date: 8/26/2010 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 7:00 - 18:00 | 11.00 | COMP | 36 | B | P | | PERF STG 5)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING.<br>RIH SET CBP @ 8276' P/U PERF F/<br>8112'-14', 4 SPF, 8 HOLES.<br>8172'-75', 4 SPF, 12 HOLES.<br>8210'-12', 4 SPF, 8 HOLES.<br>P/U 200' W/ WL. BRK 1ST INTERVAL @ 2776 PSI @ 2.1 BPM, ISIP 2345 PSI, FG .73.<br>RIH CONT PERF.<br>8243'-46', 4 SPF, 12 HOLES. 40 HOLES.<br>POOH, X-OVER FOR FRAC CREW.<br><br>FRAC STG 5)WHP 1676 PSI, BRK 2468 PSI @ 5.0 BPM. ISIP 2053 PSI, FG .69.<br>PUMP 100 BBLS @ 50.4 BPM @ 4420 PSI = 60% HOLES OPEN.<br>ISIP 2528 PSI, FG .75, NPI 475 PSI.<br>MP 4651 PSI, MR 50.4 BPM, AP 4223 PSI, AR 49.9 BPM,<br>PMP 754 BBLS SW & 22,945 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 27,945 LBS, SWI X-OVER FOR WL.<br><br>PERF STG 6)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING.<br>RIH SET CBP @ 8001' P/U PERF F/<br>7840'-43', 12 HOLES.<br>7938'-40', 8 HOLES.<br>P/U 200' W/ WL. BRK 1ST INTERVAL @ 3089 PSI @ 1.3 BPM. ISIP 2100 PSI, FG .70.<br>RIH CONT PERF.<br>7966'-71', 20 HOLES. 40 HOLES.<br>POOH, XOVER FOR FRAC CREW.<br><br>FRAC STG 6)WHP 1426 PSI, BRK 3182 PSI @ 4.7 BPM. ISIP 1938 PSI, FG .69.<br>PUMP 100 BBLS @ 50.2 BPM @ 4202 PSI = 58% HOLES OPEN.<br>ISIP 2559 PSI, FG .76, NPI 621 PSI.<br>MP 4716 PSI, MR 50.3 BPM, AP 4202 PSI, AR 49.9 BPM,<br>PMP 668 BBLS SW & 18,464 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 23,464 LBS, SWI X-OVER FOR WL.<br><br>PERF STG 7)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING.<br>RIH SET CBP @ 7803' P/U PERF F/<br>7553'-54', 4 SPF, 4 HOLES.<br>7574'-76', 4 SPF, 8 HOLES.<br>7610'-12', 4 SPF, 8 HOLES.<br>7706'-08', 4 SPF, 8 HOLES.<br>7725'-26', 4 SPF, 4 HOLES.<br>P/U 200' W/ WL. BRK 1ST INTERVAL @ 4784 PSI @ 2.3 BPM, ISIP 2125 PSI, FG .72.<br>RIH CONT PERF.<br>7771'-73', 4 SPF, 8 HOLES. 40 HOLES.<br>POOH, X-OVER FOR FRAC CREW.<br><br>FRAC STG 7)WHP 1045 PSI, BRK 2291 PSI @ 4.5 BPM. ISIP 1847 PSI, FG .68.<br>PUMP 100 BBLS @ 50.6 BPM @ 4100 PSI = 63% HOLES OPEN.<br>ISIP 2559 PSI, FG .77, NPI 712 PSI.<br>MP 4392 PSI, MR 50.9 BPM, AP 3946 PSI, AR 49.9 |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | Rig Name No: LEED 733/733 |
| Event: COMPLETION | Start Date: 8/6/2010 | End Date: 8/26/2010 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | BPM,<br>PMP 1273 BBLS SW & 47,418 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 52,418 LBS, SWI, X-OVER FOR WL.<br><br>PERF STG 8)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING.<br>RIH SET CBP @ 7425' P/.U PERF F/<br>7265'-66', 4 SPF, 4 HOLES.<br>7293'-95', 4 SPF, 8 HOLES.<br>7324'-28', 4 SPF, 16 HOLES.<br>P/U 200' W/ WL. BRK 1ST INTERVAL @ 4000 PSI @ 2.3 BPM, ISIP 2185 PSI, FG .74..<br>RIH CONT PERF.<br>7392'-95', 4 SPF, 12 HOLES. 40 HOLES.<br>POOH, X-OVER FOR FRAC CREW.<br><br>FRAC STG 8)WHP 780 PSI, BRK 2278 PSI @ 5.0 BPM. ISIP 1860 PSI, FG .69.<br>PUMP 100 BBLS @ 50.4 BPM @ 4037 PSI = 65% HOLES OPEN.<br>ISIP 1868 PSI, FG .70, NPI 8 PSI.<br>MP 4057 PSI, MR 50.4 BPM, AP 3469 PSI, AR 49.9 BPM,<br>PMP 1190 BBLS SW & 43,172 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 48,172 LBS, SWI, X-OVER FOR WL.<br><br>PERF STG 9)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING.<br>RIH SET CBP @ 7236' P/U T/ PERF GUN WENT SHORT. POOH. REPAIR GUN. RIH T/ PERF.<br>7115'-19', 4 SPF, 16 HOLES.<br>P/U 200' W/ WL. BRK 1ST INTERVAL @ 2714 PSI @ 2.3 BPM, ISIP 2000 PSI, FG .72.<br>RIH CONT PERF.<br>7200'-06', 4 SPF, 24 HOLES.<br>POOH, X-OVER FOR FRAC CREW.<br><br>FRAC STG 9)WHP 0000 PSI, BRK 0000 PSI @ 6.4 BPM. ISIP 0000 PSI, FG .00.<br>PUMP 100 BBLS @ 49.9 BPM @ 3750 PSI = 83% HOLES OPEN.<br>ISIP 2193 PSI, FG .75, NPI 60 PSI.<br>MP 4771 PSI, MR 50 BPM, AP 3823 PSI, AR 49.6 BPM,<br>PMP 769 BBLS SW & 27,249 LBS OF 30/50 SND & 5,000 LBS OF 20/40 SLC SND. TOTAL PROP 32,249 LBS, SWI, X-OVER FOR WL.<br><br>PU 4 1/2 8K HAL CBP. RIH SET CBP @ 7065'. POOH. SWI.<br>DONE FRACING THIS WELL.<br><br>TOTAL SAND 365,863#<br>TOTAL FLUID 9,393 BBLS<br><br>TOTAL SCALE = 974 GAL<br>TOTAL BIO =205 GAL |
| 8/25/2010 | 11:30 - 18:00 | 6.50 | COMP | 31 | I | P | | MOVE OVER FROM 31E4CS. RUSU. ND WH. NU BOP. RU FLOOR. SPOT TBG TRAILER. MU 2-7/8" BIT, POBS, 1.87" XN AND RIH AS MEAS AND PU 198-JTS 2-3/8" L-80 TBG. EOT AT 6276. SDFN |
| 8/26/2010 | 6:30 - 6:45 | 0.25 | COMP | 48 | | P | | JSA- D/O PLUGS. LAND TBG. ND/NU. |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 | |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | | Rig Name No: LEED 733/733 |
| Event: COMPLETION | Start Date: 8/6/2010 | | End Date: 8/26/2010 |
| Active Datum: RKB @4,855.01ft (above Mean Sea Level) | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 6:45 - 7:30 | 0.75 | COMP | 31 | I | P | | CONT PU TBG. TAG AT 7060' W/ 224-JTS IN. RU DRLG EQUIP. P-TEST TO 3000#. EST CIRC AND D/O PLUGS. |
| | 7:30 - 14:30 | 7.00 | COMP | 44 | C | P | | #1- C/O 5' SAND TO CBP AT 7065'. D/O IN 10 MIN. 25# INC. RIH.<br>#2- C/O 20' SAND TO CBP AT 7236'. D/O IN 8 MIN. 50# INC. RIH.<br>#3- C/O 20' SAND TO CBP AT 7425'. D/O IN 8 MIN. 100# INC. RIH.<br>#4- C/O 30' SAND TO CBP AT 7803'. D/O IN 15 MIN. 100# INC. RIH.<br>#5- C/O 20' SAND TO CBP AT 8801'. D/O IN 15 MIN. 150# INC. RIH.<br>#6- C/O 30' SAND TO CBP AT 8276'. D/O IN 4 MIN. 100# INC. RIH.<br>#7- C/O 30' SAND TO CBP AT 8510'. D/O IN 8 MIN. 400# INC. RIH.<br>#8- C/O 50' SAND TO CBP AT 8820'. D/O IN 8 MIN. 0# INC. RIH.<br>#9- C/O 30' SAND TO CBP AT 9011'. D/O IN 9 MIN. 100# INC. RIH.<br>PBTD- C/O 35' SAND TO PBTD AT 9282' (40' RATHOLE) W/ 293-JTS IN. CIRC CLEAN.<br><br>RD PWR SWIVEL. POOH AS LD 20-JTS. PU 7" 5K HANGER. LUB IN AND LAND 279-JTS 2-3/8" L-80 TBG W/ EOT AT 8859.88'. RD FLOOR. ND BOP. NU WH. PUMP OFF BIT AT 2500#. SHUT WELL IN FOR 30-MIN. RDSU. TURN OVER TO FLOW BACK CREW.<br><br>TBG DETAIL KB 19.00 299-JTS DELIVERED<br>7" 5K HANGER 1.00 20-JTS RETURNED<br>279-JTS 2-3/8" L-80 8837.68 LOAD 9,393 BBLS<br>1.87" XN (FE POBS) 2.20 RCVR 3,088 BBLS<br>EOT 8859.88 LTR 6,305 BBLS |
| 8/27/2010 | 7:00 - | | | 33 | A | | | 7 AM FLBK REPORT: CP 3475#, TP 2600#, 20/64" CK, 40 BWPH, HVY SAND, LIGHT GAS<br>TTL BBLS RECOVERED: 3963<br>BBLS LEFT TO RECOVER: 5430 |
| | 10:40 - | | PROD | 50 | | | | WELL TURNED TO SALES @ 1040 HR ON 8/27/10 - 1200 MCFD, 960 BWPD, CP 3600#, FTP 2600#, CK 18/64" |
| 8/28/2010 | 7:00 - | | | 33 | A | | | 7 AM FLBK REPORT: CP 3400#, TP 2550#, 18/64" CK, 35 BWPH, MED SAND, MED GAS<br>TTL BBLS RECOVERED: 4818<br>BBLS LEFT TO RECOVER: 4575 |
| 8/29/2010 | 7:00 - | | | 33 | A | | | 7 AM FLBK REPORT: CP 3200#, TP 2400#, 18/64" CK, 30 BWPH, MED SAND, - GAS<br>TTL BBLS RECOVERED: 5594<br>BBLS LEFT TO RECOVER: 3799 |
| 8/30/2010 | 7:00 - | | | 33 | A | | | 7 AM FLBK REPORT: CP 3050#, TP 2300#, 18/64" CK, 27 BWPH, TRACE SAND, - GAS<br>TTL BBLS RECOVERED: 6290<br>BBLS LEFT TO RECOVER: 3103 |
| 9/1/2010 | 7:00 - | | | | | | | WELL IP'D ON 9/1/10 - 2690 MCFD, 2 BOPD, 549 BWPD, CP 2840#, FTP 2142#, CK 20/64", LP 199#, 24 HRS |

# 1 General

## 1.1 Customer Information

| | |
|---|---|
| **Company** | US ROCKIES REGION |
| **Representative** | |
| **Address** | |

## 1.2 Well Information

| | | | |
|---|---|---|---|
| **Well** | NBU 922-31F3S BLUE | **Wellbore No.** | OH |
| **Well Name** | NBU 922-31F3S | **Common Name** | NBU 922-31F3S |
| **Project** | UTAH-UINTAH | **Site** | NBU 922-31K PAD |
| **Vertical Section Azimuth** | 337.78 (°) | **North Reference** | True |
| **Origin N/S** | | **Origin E/W** | |
| **Spud Date** | 10/15/2009 | **UWI** | NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 |
| **Active Datum** | RKB @4,855.01ft (above Mean Sea Level) | | |

# 2 Survey Name

## 2.1 Survey Name: Survey #1

| | | | |
|---|---|---|---|
| **Survey Name** | Survey #1 | **Company** | WEATHERFORD |
| **Started** | 10/15/2009 | **Ended** | |
| **Tool Name** | MWD | **Engineer** | JOSH MONROE |

### 2.1.1 Tie On Point

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) |
|---|---|---|---|---|---|
| 10.00 | 0.00 | 0.00 | 10.00 | 0.00 | 0.00 |

### 2.1.2 Survey Stations

| Date | Type | MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Build (°/100ft) | Turn (°/100ft) | TFace (°) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/15/2009 | Tie On | 10.00 | 0.00 | 0.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10/18/2009 | NORMAL | 155.00 | 0.65 | 89.79 | 155.00 | 0.00 | 0.82 | -0.31 | 0.45 | 0.45 | 0.00 | 89.79 |
| | NORMAL | 245.00 | 0.96 | 1.13 | 244.99 | 0.76 | 1.35 | 0.19 | 1.27 | 0.34 | -98.51 | 236.82 |
| | NORMAL | 335.00 | 1.98 | 336.74 | 334.96 | 2.94 | 0.75 | 2.44 | 1.31 | 1.13 | -27.10 | 315.89 |
| | NORMAL | 415.00 | 2.56 | 325.34 | 414.90 | 5.68 | -0.81 | 5.57 | 0.92 | 0.72 | -14.25 | 316.31 |
| | NORMAL | 505.00 | 2.80 | 322.09 | 504.80 | 9.07 | -3.31 | 9.65 | 0.32 | 0.27 | -3.61 | 326.03 |
| | NORMAL | 595.00 | 2.93 | 316.61 | 594.69 | 12.47 | -6.24 | 13.91 | 0.34 | 0.14 | -6.09 | 292.64 |
| | NORMAL | 685.00 | 3.18 | 342.43 | 684.56 | 16.53 | -8.57 | 18.54 | 1.54 | 0.28 | 28.69 | 92.77 |
| | NORMAL | 775.00 | 3.61 | 342.89 | 774.41 | 21.61 | -10.16 | 23.85 | 0.48 | 0.48 | 0.51 | 3.85 |
| | NORMAL | 865.00 | 3.52 | 343.07 | 864.23 | 26.96 | -11.80 | 29.42 | 0.10 | -0.10 | 0.20 | 173.00 |
| | NORMAL | 955.00 | 3.43 | 341.68 | 954.07 | 32.16 | -13.45 | 34.86 | 0.14 | -0.10 | -1.54 | 222.42 |
| | NORMAL | 1,045.00 | 3.25 | 340.86 | 1,043.91 | 37.13 | -15.13 | 40.09 | 0.21 | -0.20 | -0.91 | 194.46 |
| | NORMAL | 1,135.00 | 3.01 | 343.93 | 1,133.78 | 41.81 | -16.62 | 44.99 | 0.33 | -0.27 | 3.41 | 146.59 |
| | NORMAL | 1,225.00 | 2.74 | 334.66 | 1,223.67 | 46.03 | -18.20 | 49.49 | 0.60 | -0.30 | -10.30 | 235.28 |
| | NORMAL | 1,315.00 | 3.05 | 337.29 | 1,313.55 | 50.18 | -20.04 | 54.03 | 0.37 | 0.34 | 2.92 | 24.51 |
| | NORMAL | 1,405.00 | 3.38 | 336.74 | 1,403.41 | 54.82 | -22.01 | 59.08 | 0.37 | 0.37 | -0.61 | 354.39 |
| | NORMAL | 1,495.00 | 3.22 | 332.67 | 1,493.26 | 59.51 | -24.22 | 64.25 | 0.32 | -0.18 | -4.52 | 233.65 |
| | NORMAL | 1,585.00 | 3.59 | 338.01 | 1,583.10 | 64.37 | -26.44 | 69.58 | 0.54 | 0.41 | 5.93 | 43.29 |
| | NORMAL | 1,675.00 | 3.59 | 342.28 | 1,672.93 | 69.66 | -28.35 | 75.21 | 0.30 | 0.00 | 4.74 | 92.13 |
| | NORMAL | 1,765.00 | 2.85 | 337.27 | 1,762.79 | 74.41 | -30.07 | 80.26 | 0.88 | -0.82 | -5.57 | 198.33 |
| | NORMAL | 1,855.00 | 2.70 | 340.70 | 1,852.68 | 78.47 | -31.64 | 84.61 | 0.25 | -0.17 | 3.81 | 133.80 |

## 2.1.2 Survey Stations (Continued)

| Date | Type | MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Build (°/100ft) | Turn (°/100ft) | TFace (°) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/18/2009 | NORMAL | 1,945.00 | 2.90 | 341.74 | 1,942.57 | 82.64 | -33.05 | 89.00 | 0.23 | 0.22 | 1.16 | 14.77 |
| | NORMAL | 2,035.00 | 3.16 | 340.34 | 2,032.45 | 87.14 | -34.60 | 93.75 | 0.30 | 0.29 | -1.56 | 343.41 |
| | NORMAL | 2,065.00 | 3.25 | 339.26 | 2,062.40 | 88.71 | -35.18 | 95.42 | 0.36 | 0.30 | -3.60 | 325.60 |
| 11/15/2009 | NORMAL | 2,187.00 | 2.85 | 333.10 | 2,184.23 | 94.65 | -37.77 | 101.90 | 0.42 | -0.33 | -5.05 | 216.28 |
| | NORMAL | 2,232.00 | 3.19 | 329.68 | 2,229.17 | 96.73 | -38.91 | 104.26 | 0.85 | 0.76 | -7.60 | 330.36 |
| | NORMAL | 2,277.00 | 4.25 | 326.68 | 2,274.07 | 99.20 | -40.46 | 107.14 | 2.39 | 2.36 | -6.67 | 348.10 |
| | NORMAL | 2,323.00 | 5.25 | 331.30 | 2,319.91 | 102.47 | -42.41 | 110.90 | 2.33 | 2.17 | 10.04 | 23.25 |
| | NORMAL | 2,368.00 | 6.13 | 334.55 | 2,364.69 | 106.45 | -44.43 | 115.34 | 2.08 | 1.96 | 7.22 | 21.73 |
| | NORMAL | 2,413.00 | 7.44 | 328.93 | 2,409.37 | 111.11 | -46.97 | 120.62 | 3.26 | 2.91 | -12.49 | 330.31 |
| | NORMAL | 2,459.00 | 8.69 | 329.18 | 2,454.92 | 116.65 | -50.28 | 127.00 | 2.72 | 2.72 | 0.54 | 1.73 |
| | NORMAL | 2,504.01 | 9.75 | 330.93 | 2,499.34 | 122.90 | -53.88 | 134.15 | 2.44 | 2.36 | 3.89 | 15.68 |
| | NORMAL | 2,549.01 | 11.88 | 336.43 | 2,543.54 | 130.47 | -57.58 | 142.56 | 5.25 | 4.73 | 12.22 | 28.57 |
| | NORMAL | 2,594.01 | 14.13 | 337.18 | 2,587.38 | 139.78 | -61.56 | 152.68 | 5.01 | 5.00 | 1.67 | 4.66 |
| | NORMAL | 2,640.01 | 15.25 | 335.55 | 2,631.88 | 150.47 | -66.25 | 164.34 | 2.60 | 2.43 | -3.54 | 338.95 |
| | NORMAL | 2,685.01 | 15.75 | 334.05 | 2,675.24 | 161.35 | -71.37 | 176.35 | 1.42 | 1.11 | -3.33 | 320.56 |
| | NORMAL | 2,730.01 | 16.63 | 334.68 | 2,718.45 | 172.66 | -76.79 | 188.88 | 1.99 | 1.96 | 1.40 | 11.59 |
| | NORMAL | 2,776.01 | 18.19 | 337.30 | 2,762.35 | 185.23 | -82.38 | 202.63 | 3.79 | 3.39 | 5.70 | 27.94 |
| | NORMAL | 2,821.01 | 19.63 | 338.18 | 2,804.92 | 198.73 | -87.90 | 217.21 | 3.26 | 3.20 | 1.96 | 11.62 |
| | NORMAL | 2,866.01 | 20.38 | 337.18 | 2,847.20 | 212.97 | -93.75 | 232.61 | 1.83 | 1.67 | -2.22 | 335.01 |
| | NORMAL | 2,912.01 | 20.88 | 336.80 | 2,890.25 | 227.89 | -100.09 | 248.81 | 1.13 | 1.09 | -0.83 | 344.83 |
| | NORMAL | 2,957.01 | 21.06 | 337.43 | 2,932.27 | 242.73 | -106.35 | 264.92 | 0.64 | 0.40 | 1.40 | 51.69 |
| | NORMAL | 3,003.01 | 21.25 | 338.68 | 2,975.17 | 258.12 | -112.55 | 281.52 | 1.06 | 0.41 | 2.72 | 67.74 |
| | NORMAL | 3,048.01 | 21.25 | 339.05 | 3,017.11 | 273.34 | -118.43 | 297.82 | 0.30 | 0.00 | 0.82 | 90.17 |
| | NORMAL | 3,093.01 | 20.38 | 340.43 | 3,059.17 | 288.33 | -123.97 | 313.80 | 2.22 | -1.93 | 3.07 | 151.24 |
| | NORMAL | 3,139.01 | 19.19 | 338.18 | 3,102.46 | 302.90 | -129.46 | 329.37 | 3.07 | -2.59 | -4.89 | 211.56 |
| | NORMAL | 3,184.01 | 18.63 | 335.05 | 3,145.03 | 316.28 | -135.25 | 343.94 | 2.57 | -1.24 | -6.96 | 239.62 |
| | NORMAL | 3,229.01 | 18.63 | 336.05 | 3,187.67 | 329.37 | -141.20 | 358.31 | 0.71 | 0.00 | 2.22 | 90.47 |
| | NORMAL | 3,274.01 | 17.63 | 335.80 | 3,230.44 | 342.15 | -146.91 | 372.30 | 2.23 | -2.22 | -0.56 | 184.33 |
| | NORMAL | 3,319.01 | 17.06 | 335.80 | 3,273.39 | 354.39 | -152.41 | 385.71 | 1.27 | -1.27 | 0.00 | 180.00 |
| | NORMAL | 3,365.01 | 16.75 | 337.43 | 3,317.41 | 366.67 | -157.72 | 399.08 | 1.23 | -0.67 | 3.54 | 123.96 |
| | NORMAL | 3,410.01 | 15.63 | 337.93 | 3,360.62 | 378.27 | -162.48 | 411.63 | 2.51 | -2.49 | 1.11 | 173.14 |
| | NORMAL | 3,456.01 | 13.94 | 338.80 | 3,405.10 | 389.18 | -166.82 | 423.37 | 3.71 | -3.67 | 1.89 | 172.94 |
| | NORMAL | 3,501.01 | 12.75 | 335.68 | 3,448.88 | 398.76 | -170.82 | 433.75 | 3.09 | -2.64 | -6.93 | 209.67 |
| | NORMAL | 3,546.01 | 11.94 | 335.18 | 3,492.84 | 407.51 | -174.82 | 443.36 | 1.82 | -1.80 | -1.11 | 187.27 |
| 11/16/2009 | NORMAL | 3,591.01 | 10.75 | 344.55 | 3,536.96 | 415.78 | -177.89 | 452.18 | 4.87 | -2.64 | 20.82 | 127.38 |
| | NORMAL | 3,637.01 | 9.69 | 334.68 | 3,582.24 | 423.42 | -180.69 | 460.31 | 4.44 | -2.30 | -21.46 | 234.02 |
| | NORMAL | 3,682.01 | 8.69 | 338.80 | 3,626.66 | 430.01 | -183.54 | 467.49 | 2.66 | -2.22 | 9.16 | 148.68 |
| | NORMAL | 3,773.01 | 7.63 | 337.18 | 3,716.74 | 441.99 | -188.37 | 480.40 | 1.19 | -1.16 | -1.78 | 191.44 |
| | NORMAL | 3,863.01 | 5.63 | 342.93 | 3,806.13 | 451.72 | -191.98 | 490.77 | 2.34 | -2.22 | 6.39 | 164.48 |
| | NORMAL | 3,954.01 | 4.56 | 356.68 | 3,896.77 | 459.60 | -193.50 | 498.64 | 1.78 | -1.18 | 15.11 | 137.94 |
| | NORMAL | 4,045.01 | 1.94 | 357.30 | 3,987.62 | 464.75 | -193.79 | 503.52 | 2.88 | -2.88 | 0.68 | 179.54 |
| | NORMAL | 4,135.01 | 1.31 | 1.68 | 4,077.58 | 467.30 | -193.83 | 505.89 | 0.71 | -0.70 | 4.87 | 171.03 |
| | NORMAL | 4,226.01 | 1.06 | 13.43 | 4,168.56 | 469.16 | -193.60 | 507.53 | 0.38 | -0.27 | 12.91 | 141.59 |
| | NORMAL | 4,316.01 | 0.69 | 16.05 | 4,258.55 | 470.49 | -193.26 | 508.63 | 0.41 | -0.41 | 2.91 | 175.14 |
| | NORMAL | 4,407.01 | 0.25 | 53.68 | 4,349.55 | 471.13 | -192.95 | 509.11 | 0.57 | -0.48 | 41.35 | 162.76 |
| | NORMAL | 4,497.01 | 0.13 | 112.68 | 4,439.55 | 471.21 | -192.69 | 509.09 | 0.24 | -0.13 | 65.56 | 148.67 |
| | NORMAL | 4,588.01 | 0.25 | 130.18 | 4,530.55 | 471.04 | -192.45 | 508.84 | 0.14 | 0.13 | 19.23 | 34.73 |
| | NORMAL | 4,679.01 | 0.31 | 131.43 | 4,621.55 | 470.75 | -192.11 | 508.44 | 0.07 | 0.07 | 1.37 | 6.44 |
| | NORMAL | 4,769.01 | 0.56 | 162.30 | 4,711.55 | 470.17 | -191.79 | 507.78 | 0.37 | 0.28 | 34.30 | 59.29 |
| | NORMAL | 4,860.01 | 0.44 | 347.68 | 4,802.55 | 470.09 | -191.73 | 507.68 | 1.10 | -0.13 | -191.89 | 182.37 |
| | NORMAL | 4,951.01 | 0.31 | 348.55 | 4,893.54 | 470.67 | -191.86 | 508.27 | 0.14 | -0.14 | 0.96 | 177.93 |
| | NORMAL | 5,041.01 | 0.25 | 2.80 | 4,983.54 | 471.10 | -191.90 | 508.69 | 0.10 | -0.07 | 15.83 | 137.73 |
| | NORMAL | 5,132.01 | 0.20 | 124.29 | 5,074.54 | 471.21 | -191.76 | 508.73 | 0.43 | -0.05 | 133.51 | 154.31 |
| | NORMAL | 5,223.01 | 0.25 | 133.80 | 5,165.54 | 470.99 | -191.48 | 508.42 | 0.07 | 0.05 | 10.45 | 41.57 |
| | NORMAL | 5,313.01 | 0.25 | 106.18 | 5,255.54 | 470.80 | -191.15 | 508.12 | 0.13 | 0.00 | -30.69 | 256.19 |
| | NORMAL | 5,404.01 | 0.31 | 142.18 | 5,346.54 | 470.55 | -190.81 | 507.76 | 0.20 | 0.07 | 39.56 | 89.75 |
| | NORMAL | 5,495.01 | 0.19 | 173.05 | 5,437.54 | 470.20 | -190.64 | 507.38 | 0.19 | -0.13 | 33.92 | 146.43 |

## 2.1.2 Survey Stations (Continued)

| Date | Type | MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Build (°/100ft) | Turn (°/100ft) | TFace (°) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/16/2009 | NORMAL | 5,585.01 | 0.31 | 164.43 | 5,527.54 | 469.82 | -190.56 | 506.99 | 0.14 | 0.13 | -9.58 | 338.26 |
| | NORMAL | 5,676.01 | 0.56 | 180.30 | 5,618.54 | 469.14 | -190.49 | 506.34 | 0.30 | 0.27 | 17.44 | 33.81 |
| | NORMAL | 5,767.01 | 0.69 | 179.55 | 5,709.53 | 468.14 | -190.49 | 505.42 | 0.14 | 0.14 | -0.82 | 356.02 |
| | NORMAL | 5,857.01 | 0.88 | 171.05 | 5,799.52 | 466.92 | -190.38 | 504.24 | 0.25 | 0.21 | -9.44 | 324.20 |
| | NORMAL | 5,948.01 | 0.19 | 41.55 | 5,890.52 | 466.34 | -190.17 | 503.63 | 1.11 | -0.76 | -142.31 | 188.33 |
| | NORMAL | 6,039.01 | 0.13 | 208.43 | 5,981.52 | 466.36 | -190.12 | 503.63 | 0.35 | -0.07 | 183.38 | 174.68 |
| 11/17/2009 | NORMAL | 6,129.01 | 0.38 | 197.55 | 6,071.52 | 465.99 | -190.26 | 503.33 | 0.28 | 0.28 | -12.09 | 343.57 |
| | NORMAL | 6,220.01 | 0.60 | 200.00 | 6,162.52 | 465.25 | -190.51 | 502.75 | 0.24 | 0.24 | 2.69 | 6.67 |
| | NORMAL | 6,311.01 | 1.25 | 327.93 | 6,253.51 | 465.65 | -191.20 | 503.37 | 1.85 | 0.71 | 140.58 | 144.22 |
| | NORMAL | 6,401.01 | 0.69 | 332.93 | 6,343.50 | 466.96 | -191.97 | 504.88 | 0.63 | -0.62 | 5.56 | 173.90 |
| | NORMAL | 6,492.01 | 0.56 | 314.30 | 6,434.49 | 467.76 | -192.54 | 505.83 | 0.26 | -0.14 | -20.47 | 228.31 |
| | NORMAL | 6,583.01 | 1.50 | 347.30 | 6,525.48 | 469.23 | -193.12 | 507.42 | 1.18 | 1.03 | 36.26 | 49.49 |
| | NORMAL | 6,673.01 | 1.00 | 2.05 | 6,615.46 | 471.17 | -193.35 | 509.29 | 0.66 | -0.56 | 16.39 | 154.47 |
| | NORMAL | 6,764.01 | 0.50 | 12.68 | 6,706.45 | 472.35 | -193.23 | 510.34 | 0.57 | -0.55 | 11.68 | 169.72 |
| | NORMAL | 6,855.01 | 0.56 | 35.17 | 6,797.44 | 473.10 | -192.89 | 510.91 | 0.24 | 0.07 | 24.71 | 85.35 |
| | NORMAL | 6,946.01 | 0.50 | 51.18 | 6,888.44 | 473.71 | -192.32 | 511.26 | 0.17 | -0.07 | 17.59 | 119.93 |
| | NORMAL | 7,036.01 | 0.44 | 100.18 | 6,978.44 | 473.90 | -191.68 | 511.19 | 0.44 | -0.07 | 54.44 | 122.47 |
| | NORMAL | 7,127.01 | 0.69 | 92.68 | 7,069.43 | 473.81 | -190.79 | 510.77 | 0.29 | 0.27 | -8.24 | 339.75 |
| | NORMAL | 7,218.01 | 1.00 | 106.55 | 7,160.42 | 473.56 | -189.48 | 510.04 | 0.41 | 0.34 | 15.24 | 40.48 |
| | NORMAL | 7,308.01 | 0.94 | 173.30 | 7,250.41 | 472.60 | -188.64 | 508.84 | 1.19 | -0.07 | 74.17 | 126.06 |
| 11/18/2009 | NORMAL | 7,399.01 | 0.56 | 287.30 | 7,341.41 | 471.99 | -188.98 | 508.40 | 1.40 | -0.42 | 125.27 | 156.34 |
| | NORMAL | 7,490.02 | 0.44 | 265.43 | 7,432.41 | 472.10 | -189.75 | 508.79 | 0.25 | -0.13 | -24.03 | 227.22 |
| | NORMAL | 7,580.02 | 0.52 | 186.37 | 7,522.40 | 471.66 | -190.14 | 508.54 | 0.68 | 0.09 | -87.84 | 236.24 |
| | NORMAL | 7,671.02 | 0.75 | 216.05 | 7,613.40 | 470.77 | -190.54 | 507.86 | 0.43 | 0.25 | 32.62 | 70.49 |
| | NORMAL | 7,762.02 | 0.63 | 219.18 | 7,704.39 | 469.90 | -191.20 | 507.31 | 0.14 | -0.13 | 3.44 | 164.12 |
| | NORMAL | 7,853.02 | 0.44 | 9.80 | 7,795.39 | 469.86 | -191.46 | 507.37 | 1.14 | -0.21 | 165.52 | 167.97 |
| | NORMAL | 7,943.02 | 0.13 | 337.43 | 7,885.39 | 470.29 | -191.44 | 507.76 | 0.37 | -0.34 | -35.97 | 191.90 |
| | NORMAL | 8,034.02 | 0.13 | 37.17 | 7,976.39 | 470.47 | -191.42 | 507.92 | 0.14 | 0.00 | 65.65 | 119.87 |
| | NORMAL | 8,125.02 | 0.31 | 140.68 | 8,067.39 | 470.36 | -191.20 | 507.74 | 0.40 | 0.20 | 113.75 | 123.88 |
| | NORMAL | 8,215.02 | 0.44 | 136.43 | 8,157.39 | 469.92 | -190.81 | 507.18 | 0.15 | 0.14 | -4.72 | 345.79 |
| | NORMAL | 8,306.02 | 0.81 | 126.93 | 8,248.38 | 469.28 | -190.05 | 506.30 | 0.42 | 0.41 | -10.44 | 339.57 |
| | NORMAL | 8,397.02 | 1.06 | 136.93 | 8,339.37 | 468.28 | -188.96 | 504.97 | 0.33 | 0.27 | 10.99 | 38.20 |
| | NORMAL | 8,488.02 | 0.88 | 143.55 | 8,430.36 | 467.11 | -187.97 | 503.50 | 0.23 | -0.20 | 7.27 | 151.37 |
| 11/19/2009 | NORMAL | 8,578.02 | 0.88 | 146.55 | 8,520.35 | 465.97 | -187.18 | 502.15 | 0.05 | 0.00 | 3.33 | 91.50 |
| | NORMAL | 8,669.02 | 1.50 | 153.30 | 8,611.33 | 464.33 | -186.26 | 500.28 | 0.70 | 0.68 | 7.42 | 16.13 |
| | NORMAL | 8,759.02 | 1.50 | 153.80 | 8,701.30 | 462.22 | -185.21 | 497.93 | 0.01 | 0.00 | 0.56 | 90.25 |
| | NORMAL | 8,850.02 | 1.22 | 159.02 | 8,792.27 | 460.24 | -184.34 | 495.77 | 0.34 | -0.31 | 5.74 | 158.73 |
| | NORMAL | 8,878.02 | 1.25 | 145.05 | 8,820.26 | 459.71 | -184.06 | 495.18 | 1.08 | 0.11 | -49.89 | 268.68 |
| 11/22/2009 | NORMAL | 9,345.02 | 1.25 | 145.05 | 9,287.15 | 451.36 | -178.22 | 485.24 | 0.00 | 0.00 | 0.00 | 0.00 |

283/42 62/9225

API Well No: 43047504190000

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ML23607

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 922-31F3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047504190000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6515 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2607 FSL 1443 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESW Section: 31 Township: 09.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

**11.** CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start: 3/8/2011 | ☐ ACIDIZE | ☐ ALTER CASING | ✓ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DRILLING REPORT<br>Report Date: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

The operator request approval to conduct wellhead/casing repair operations on the subject well location. Please find the attached procedures for the proposed repair work for the subject well location.

**Approved by the Utah Division of Oil, Gas and Mining**

**Date:** 03/09/2011

**By:** Dark K Quist

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Gina Becker | 720 929-6086 | Regulatory Analyst II |
| **SIGNATURE** N/A | | **DATE** 3/8/2011 |

WORKORDER #: 88119394 3/1/11

Name: NBU 922-31F3S – 922-31K PAD
Surface Location: NESW SEC.31, T9S, R22E
Uintah County, UT

API: 4304750419 LEASE#: ML 23607

ELEVATIONS: 4840' GL 4859' KB

TOTAL DEPTH: 9345' PBTD: 9283'

SURFACE CASING: 9 5/8", 36# J-55 @ 2126'

PRODUCTION CASING: 4 1/2", 11.6#, I-80 @ 9327'
TOC @ 144' per CBL

PERFORATIONS: Wasatch 7115' – 7119'
Mesaverde 7200' – 9242'

| Tubular/Borehole | Drift inches | Collapse psi | Burst psi | Capacities | | |
|---|---|---|---|---|---|---|
| | | | | Gal./ft. | Cuft/ft. | Bbl./ft. |
| 2.375" 4.7# J-55 tbg. | 1.901 | 8100 | 7700 | 0.1624 | 0.02173 | 0.00387 |
| 4.5" 11.6# I-80 | 3.875 | 6350 | 7780 | 0.6528 | 0.0872 | 0.01554 |
| 9.625" 36# J-55 | 8.921 | 2020 | 3520 | 3.247 | 0.434 | 0.0773 |
| **Annular Capacities** | | | | | | |
| 2.375" tbg. X 4 ½" 11.6# csg | | | | 0.4227 | 0.0565 | 0.01006 |

GEOLOGICAL TOPS:

1199' Green River
1450' Bird's Nest
1934' Mahogany
4453' Wasatch
7142' Mesaverde

# NBU 922-31F3S – WELLHEAD REPLACEMENT PROCEDURE

## PREP-WORK PRIOR TO MIRU:

1. Dig out down to the 2" surface casing valve or to the valve on the riser off the surface casing.

2. Install a tee with 2 valves, with a pressure gauge and sensor on one valve.

3. Open casing valve and record pressures.

4. Install nipple and steel hose on the other valve, the relief valve,. Do not use hammer unions. No impact equipment or tools to be used for any of this installation. Extend hose and hard piping to a downwind location at least 100' from the wellhead. Consider installing a manifold so that vent area could be in two locations approx. 90 degrees apart from the wellhead.

5. Open the relief valve and blow well down to the atmosphere.

6. Make a determination of amount of gas flow, either by installation of a choke nipple, bucket test or other.

7. Shut well in. Observe for rate of build-up by utilizing sensor data. Do not build-up for more than 24 hours. Vent gas through the vent line and leave open to the atmosphere.

## WORKOVER PROCEDURE:

1. MIRU workover rig.

2. Kill well with 10# brine / KCL (dictated by well pressure ).

3. Remove tree, install double BOP with blind and 2 3/8" pipe rams, with accumulator closing unit and manual back-ups. Function test BOP system.

4. POOH w/ tubing laying down extra tubing.

5. Rig up wireline service. RIH and set CBP @ ~7065'. Dump bail 4 sx cement on top of plug. POOH and RD wireline service. TIH w/ tubing and seating nipple. Land tubing ±60' above cement. RDMO.

6. Monitor well pressures. If surface casing is dead. MIRU. ND WH and NU BOP. POOH w/ tubing.

7. Depending on conditions at wellsite, continue with either CUT/PATCH Procedure or BACK-OFF Procedure.

## CUT/PATCH PROCEDURE:

1. PU internal casing cutters and RIH. Cut casing at +/- 30' from surface.

2. POOH, LD cutters and casing.

3. PU 7 3/8" overshot with 4 ½" right hand standard wicker grapple, 1 - 4 ¾" drill collar with 3 ½" IF threads, pup joint, manual bumper sub, and crossovers. If casing cut is deeper than ±30' utilize >7000 ft-lb torque pipe as needed. Pull a minimum of 10,000# to keep grapple engaged if cement top is high (<~900'). If cement top is low (>~900'), more weight will be required to put casing in neutral. Torque casing string to ±7000 ft-lbs, count number of turns to make-up, and document in the daily report. Ensure that tongs are safely anchored to rig and that all personnel are at a safe working distance from the tongs during torque-up and torque release. After initial make-up, place pipe torque to neutral and mark pipe. Place ±7000 ft-lbs on casing a second time, count turns, then return pipe torque to neutral and count turns. Repeat if torque-up turns do not equal torque release turns. Once torque-in equals torque-out, release overshot, POOH, and lay down.

4. TIH w/ skirted mill and dress off the fish top for approximately ½ hour. TOOH.

5. PU & RIH w/ 4 ½" 10k external casing patch on 4 ½" P-110 casing. Ensure that sliding sleeve assembly shifts ±3' and casing tags no-go portion of patch. NOTE: Shear pins will shear at 3500 to 4500 lbs.

6. Latch fish, PU to 100,000# tension. RU B&C. Cycle pressure test to 7,000# / 9,000# psi.

7. Install slips. Land casing w/ 80,000# tension.

8. Cut-off and dress 4 ½" casing stub.

9. NUWH. PU 3 7/8" bit, POBS and RIH. D/O cement and plug ~7015'. Clean out to PBTD (9283').

10. POOH, land tbg and pump off POBS.

11. NUWH, RDMO. Turn well over to production ops.

## BACK-OFF PROCEDURE:

1. PU internal casing cutters and RIH. Cut casing at +/- 6' from surface.

2. POOH, LD cutters and casing.

3. PU 4 ½" overshot. RIH, latch fish. Pick string weight to neutral.

4. MIRU casing crew and wireline services. RIH and shoot string shot at casing collar @ ± 46'.

5. Back-off casing, POOH.

6. PU new casing joint with buttress threads and entry guide and RIH. Tag casing top. Thread into casing and torque up to ±7000 ft-lbs, count number of additional turns to make-up, and document in the daily report. Ensure that tongs are safely anchored to rig and that all personnel are at a safe working distance from the tongs during torque-up and torque release. After initial make-up, place pipe torque to neutral and mark pipe. Place ±7000 ft-lbs on casing a second time, count turns, then return pipe torque to neutral and count turns. Repeat if torque-up turns do not equal torque release turns. Once torque-in equals torque-out go to step 7.

7. PU 100,000# tension string weight. RU B&C. Cycle pressure test to 7,000# / 9,000# psi.

8. Install slips. Land casing w/ 80,000# tension.

9. Cut-off and dress 4 ½" casing stub.

10. NUWH. PU 3 7/8" bit, POBS and RIH. D/O cement and plug ~7015'. Clean out to PBTD (9283').

11. POOH, land tbg and pump off POBS.

12. NUWH, RDMO. Turn well over to production ops.

# Logan High Pressure Casing Patches
## Assembly Procedure

All parts should be thoroughly greased before being assembled.

1. Install all four Logan Type “L” Packers in the spaces provided in the Casing Patch Bowl. Refer to diagram provided for proper installation.

2. Install Packer Protector from the Basket Grapple end of the Bowl. The beveled end of the Packer Protector goes in first. Carefully push the Packer Protector through the four Type “L” Packers.

3. Align Shear Pin Holes in Packer Protector so that the holes have just passed into the counter bore at the Top Sub end, refer to diagram. The Packer Protector is provided with four Shear Pin Holes. Use only two holes, 180 degrees apart and install the pins.

4. Screw the Basket Grapple in from the lower end of the Bowl, using left-hand rotation. The Tang Slot in the Basket Grapple must land in line with the slot in the Bowl.

5. Insert the Basket Grapple Control into the end of the Bowl. Align Tang on the Basket Grapple Control with the Tang Slot of the Bowl and Basket Grapple. This secures the Bowl and the Basket Grapple together.

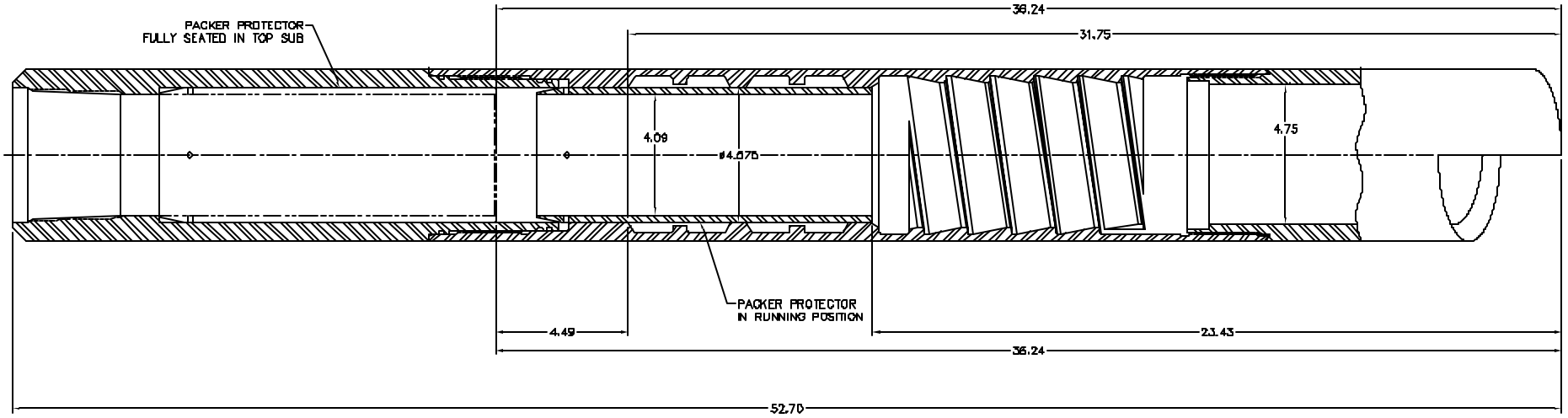
6. Install the Cutlipped Guide into the lower end of the Bowl.

7. Install O-Rings on the two five-foot long Extensions. Screw the first Extension into the top end of the Bowl. Screw the second Extension into the top end of the first Extension.

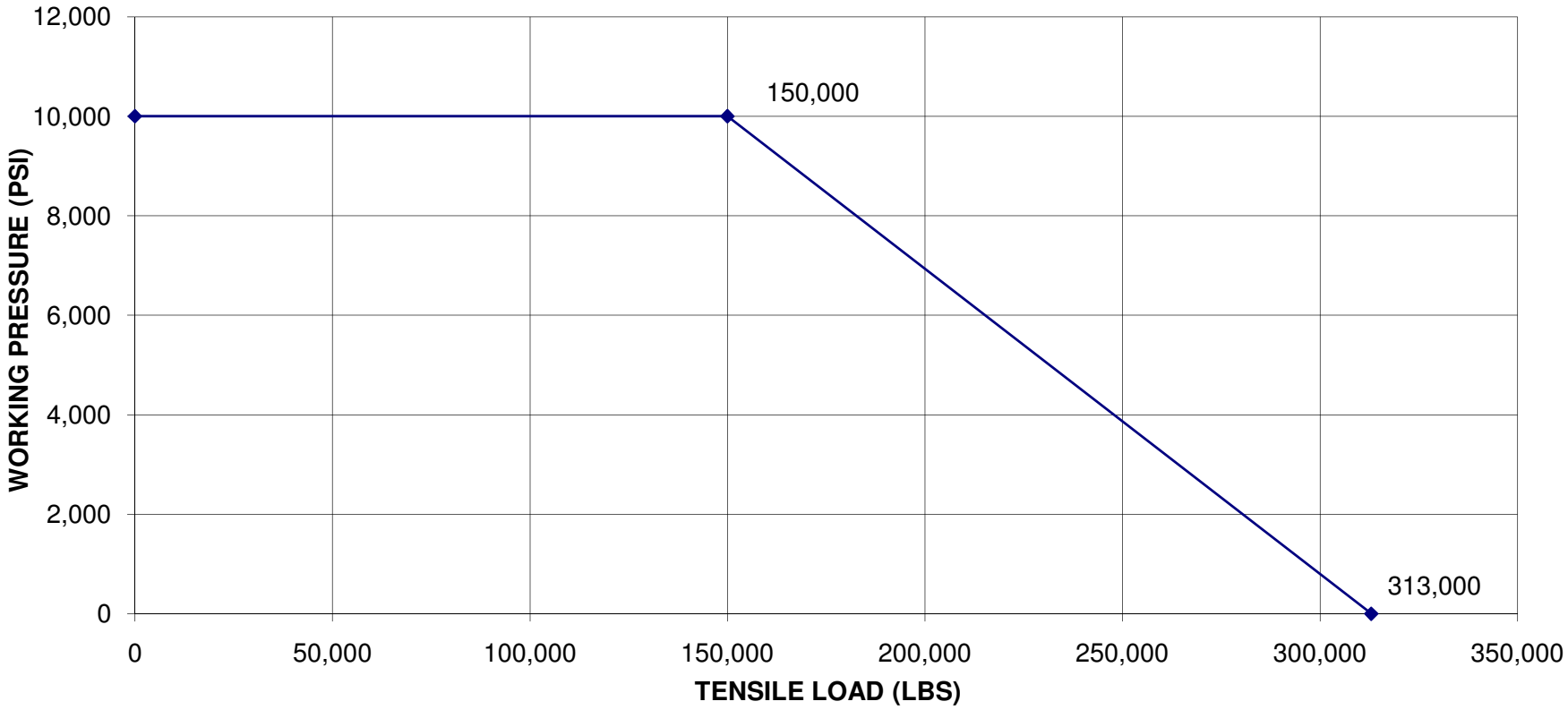
8. Install O-Ring on Top Sub. Screw Top Sub into top end of second Extension.

Follow recommended Make-Up Torque as provided in chart.

# 510L-005-001 4-1/2" LOGAN HP CASING PATCH



# STRENGTH DATA FOR LOGAN 5.88" OD "L" TYPE CSG PATCH
# 4-1/2 CASING, 10K PSI MAX WP 125K YIELD MAT'L
# LOGAN ASSEMBLY NO. 510L-005 -000




COLLAPSE PRESSURE:
11,222 PSI @ 0 TENSILE
8,634 PSI @ 220K TENSILE

Tensile Strength @ Yield:
Tensile Strength w/ 0 Int. Press.= 472,791lbs.
Tensile Strength w/ 10K Int. Press.= 313,748lbs.

DATA BY SLS 11/16/2009

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** ML23607

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 922-31F3S

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047504190000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6515 Ext

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2607 FSL 1443 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: NESW Section: 31 Township: 09.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

**11.** CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ✓ CASING REPAIR |
| ✓ SUBSEQUENT REPORT Date of Work Completion: 5/9/2011 | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DRILLING REPORT Report Date: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: Wellhead Repair |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

The operator has concluded wellhead/casing repairs on the subject well location. Please see the attached chronological history for details of the operations.

**Accepted by the Utah Division of Oil, Gas and Mining**

**FOR RECORD ONLY**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Gina Becker | 720 929-6086 | Regulatory Analyst II |
| **SIGNATURE** N/A | | **DATE** 5/9/2011 |

RECEIVED May. 09, 2011

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 | |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | | Rig Name No: MILES-GRAY 1/1 |
| Event: WELL WORK EXPENSE | Start Date: 3/18/2011 | | End Date: 3/29/2011 |
| Active Datum: RKB @4,855.00ft (above Mean Sea Leve | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 3/25/2011 | 7:00 - 7:15 | 0.25 | WO/REP | 48 | | P | | JSA-SAFETY MEETING, MIRU |
| | 7:15 - 10:30 | 3.25 | WO/REP | 30 | A | P | | MIRU SERVICE UNIT, PUMP 40 BBLS WTR DN TBG, N/D WH, N/U BOPS AND TBG EQUIP. |
| | 10:30 - 13:00 | 2.50 | WO/REP | 31 | I | P | | TOOH W/ 279 JTS 2 3/8" TBG, |
| | 13:00 - 16:30 | 3.50 | WO/REP | 34 | I | P | | R/U CUTTER WIRELINE, RIH W/ 4 1/2" GAUGE RING TO 7100', RIH W/ BAKER 10K CBP, SET CBP @ 7050', RIH DUMP BAIL 4 SACKS CEMENT ON TOP OF CBP. R/D WIRELINE, |
| 3/28/2011 | 7:00 - 7:30 | 0.50 | WO/REP | 48 | | P | | JSA-SAFETY MEETING W/ WEATHERFORD, CUTTER, FRANKS CSG, AND RIG CREW, REPAIR WH AND BACK CSG OFF, PINCH POINTS, SLIPS TRIP AND FALL, |
| | 7:30 - 13:00 | 5.50 | WO/REP | 30 | | P | | N/D BOPS AND CSG SPOOL, R/U POWER SWIVEL, P/U INSIDE CUTTER, RIH CUT 4 1/2" CSG OFF @ 9' BELOW SURFACE, P/O LAY DN CUT OFF STUB, R/U CSG TONG AND WIRELINE, P/U OVERSHOT RIH LATCH ONTO 4 1/2" CSG, MADE CSG UP TO 2500# TORQUE W/ 5 ROUNDS, RIH W/ STRING SHOT, SET ON COLLAR # 4, PUT LEFT HAND TORQUE IN CSG, SHOT STRING SHOT, BACK CSG OFF, P/O W/ CUTTING COLLAR OFF TO SEND TO HOUSTON, LAY DN 3 JTS CSG, CAME OUT W/ COLLAR #4, P/U RIH W/ 1- JT 4 1/2" BUTTRESS W/ SKIRTED COLLAR, 2- JTS 4 1/2" BUTTRESS CSG, 1- 10' 4 1/2" SUB, SCREWED INTO 4 1/2" CSG W/ A EXTRA 5 ROUNDS, TOTAL 17 ROUNDS, TORQUE CSG UP TO 6800#, PULLED CSG TO 100,000#, |
| | 13:00 - 14:30 | 1.50 | WO/REP | 33 | C | P | | R/U B & C QUICK TEST TO 4 1/2" CSG, PRESSURE TEST W/ LOW TEST 1000# FOR 15 MIN OK, MIDDLE TEST TO 3500# FOR 15 MIN OK, HIGH TEST TO 7000# FOR 30 MIN OK, R/D TESTER, |
| | 14:30 - 15:00 | 0.50 | WO/REP | 30 | | P | | SLCK OFF ON CSG, PUT WEATHERFORD C-21 SLIPS IN CSG BOWL, PULLED CSG TO 80,000# W/ SET SLIPS ON CSG @ 80,000#, CUT CSG STUB OFF, DRESS CSG TOP UP, |
| | 15:00 - 15:45 | 0.75 | WO/REP | 33 | C | P | | R/U B & C QUICK TEST TO SURFACE CSG, PRESSURE TEST SURFACE W/ LOW TEST 200# FOR 15 MIN, OK, HIGH TEST 500# FOR 30 MIN, OK R/D TESTER |
| | 15:45 - 18:00 | 2.25 | WO/REP | 30 | | P | | N/U NEW CSG SPOOL AND TBG HEAD, N/U BOPS AND R/U TBG EQUIP, |
| 3/29/2011 | 7:00 - 7:15 | 0.25 | WO/REP | 48 | | P | | JSA-SAFETY MEETING, DRILL OUT W/ N2/ FOAM |
| | 7:15 - 10:30 | 3.25 | WO/REP | 31 | I | P | | P/U 3 7/8" BIT AND POBS, TIH W 2 3/8" TBG W/ BROACH TBG IN HOLE, TAG CEMENT @ 7000' |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 922-31F3S BLUE | Spud Conductor: 10/7/2009 | Spud Date: 10/15/2009 |
| Project: UTAH-UINTAH | Site: NBU 922-31K PAD | Rig Name No: MILES-GRAY 1/1 |
| Event: WELL WORK EXPENSE | Start Date: 3/18/2011 | End Date: 3/29/2011 |
| Active Datum: RKB @4,855.00ft (above Mean Sea Leve | UWI: NE/SW/0/9/S/22/E/31/0/0/26/PM/S/2,607.00/W/0/1,443.00/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 10:30 - 17:30 | 7.00 | WO/REP | 44 | C | P | | R/U POWER SWIVEL AND N2 / FOAM UNIT, PRESSURE TEST BOPS TO 3000# OK, ESTB CIRC W/ N2 / FOAM UNIT DN TBG OUT CSG, DRILL OUT CEMENT AND CBP @ 7150', CIRC WELL CLEAN, TIH TAG FILL @ 9244' C/O FILL TO 9278' MILLING ON OLD POBS, CIRC WELL CLEAN W/ N2 / FOAM UNIT, R/D POWER SWIVEL AND FOAM UNIT, P/O LAY DN 14 JTS ON TRAILER, LAND TBG W/ 279JTS 2 3/8" L-80 TBG, EOT @ 8852.63', N/D BOPS, N/U WELL HEAD, PUMP BIT OFF @ 1700 #, SICP = 1200 #, SITP = 0 #, WELL SHUT IN WAIT FOR NEW SALES LINE, R/D SERVICE UNIT,<br><br>KB = 19.00'<br>HANGER = .83'<br>279 JTS 2 3/8" L-80 TBG = 8830.60'<br>XN-NIPPLE 1-875 = 2.20'<br><br>EOT = 8852.63' |

# DIVISION OF OIL, GAS AND MINING

## *SPUDDING INFORMATION*

Name of Company: **KERR-McGEE OIL & GAS ONSHORE, L.P.**

Well Name: **NBU 922-31F3S**

Api No: **43-047-50419** Lease Type: **STATE**

Section **31** Township **09S** Range **22E** County **UINTAH**

Drilling Contractor **PETE MARTIN DRILLING** RIG # **BUCKET**

## SPUDDED:

Date **10/07/2009**

Time **11:00 AM**

How

***Drilling will Commence:***

Reported by **KENNY**

Telephone # **(435) 828-1691**

**Date** **10/07/2009** **Signed** **CHD**

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 6

# ENTITY ACTION FORM

Operator: KERR McGEE OIL & GAS ONSHORE LP
Operator Account Number: N 2995
Address: P.O. Box 173779
city DENVER
state CO zip 80217
Phone Number: (720) 929-6100

**Well 1**

| API Number | Well Name | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|
| 4304750417 | NBU 922-31J2S | NESW | 31 | 9S | 22E | UINTAH |

| Action Code | Current Entity Number | New Entity Number | Spud Date | Entity Assignment Effective Date |
|---|---|---|---|---|
| B | 99999 | 2900 | 10/7/2009 | 10/13/09 |

Comments: MIRU PETE MARTIN BUCKET RIG. WSMVD
SPUD WELL LOCATION ON 10/07/2009 AT 13:30 HRS. BHL = NWSE

**Well 2**

| API Number | Well Name | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|
| 4304750415 | NBU 922-31F2S | NESW | 31 | 9S | 22E | UINTAH |

| Action Code | Current Entity Number | New Entity Number | Spud Date | Entity Assignment Effective Date |
|---|---|---|---|---|
| B | 99999 | 2900 | 10/7/2009 | 10/13/09 |

Comments: MIRU PETE MARTIN BUCKET RIG. WSMVD
SPUD WELL LOCATION ON 10/07/2009 AT 16:00 HRS. BHL = SENW

**Well 3**

| API Number | Well Name | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|
| 4304750419 | NBU 922-31F3S | NESW | 31 | 9S | 22E | UINTAH |

| Action Code | Current Entity Number | New Entity Number | Spud Date | Entity Assignment Effective Date |
|---|---|---|---|---|
| B | 99999 | 2900 | 10/8/2009 | 10/13/09 |

Comments: MIRU PETE MARTIN BUCKET RIG. WSMVD
SPUD WELL LOCATION ON 10/08/2009 AT 09:00 HRS. BHL = SENW

ACTION CODES:
- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

ANDY LYTLE
Name (Please Print)
Signature
REGULATORY ANALYST
Title
10/8/2009
Date

RECEIVED
OCT 08 2009
DIV. OF OIL, GAS & MINING

(5/2000)